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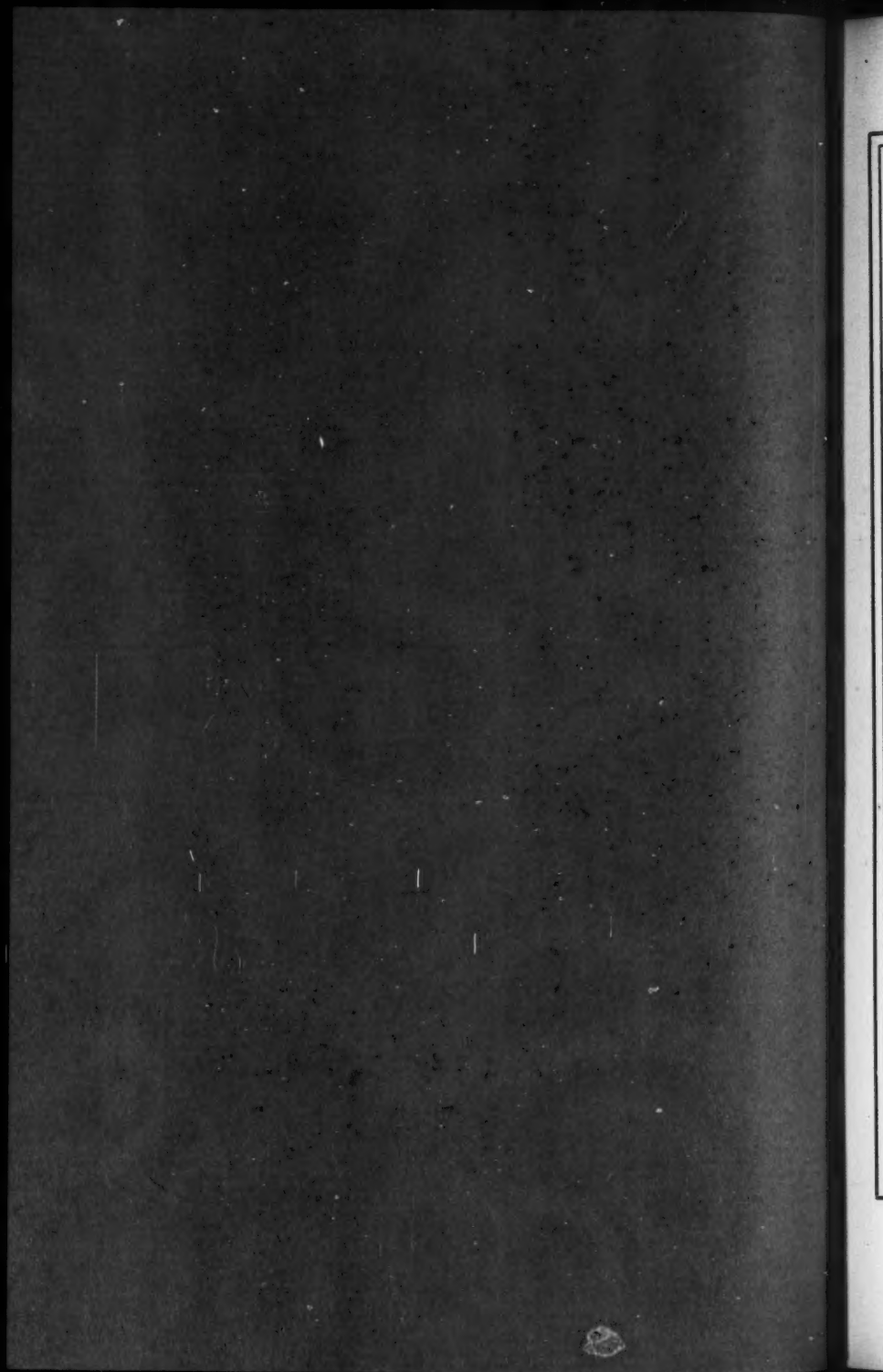
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THE MILBANK MEMORIAL FUND

QUARTERLY BULLETIN—

APRIL • 1933



**THE MILBANK MEMORIAL FUND
QUARTERLY
BULLETIN ~**

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**APRIL • 1933
VOL. XI NO. 2**

The Milbank Memorial Fund **QUARTERLY BULLETIN** is published by the Milbank
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THE articles in this issue by Dr. George F. McCleary, Albert G. Milbank, and I. S. Falk, were based on addresses presented at the annual meetings of the Boards of Counsel of the Milbank Memorial Fund, referred to on page 154. As these papers indicate, these meetings were devoted not only to discussion of the permanent values involved in various present procedures of public health administration, including nursing and tuberculosis prevention, but to consideration of more fundamental problems affecting the life of mankind.

DR. C.-E. A. WINSLOW said that in this sense the meetings were indicative of a tendency which is manifest in our national and international life. While we are analyzing and evaluating the old things we have been doing, and counting their costs, we are attacking such fundamental and difficult problems as the more widespread distribution of medical care, and the still more difficult, subtle, and elusive problem of population, which ten years ago we shouldn't have dared to think of attacking. While the severity of the problems with which the world is confronted has forced us to count costs, it has also forced us to take our courage in our hands and attack basic problems like these in the belief that there is no field in which there are not possibilities of intelligent control and intelligent social direction by the application of scientific methodology.

*Medical Club
M.H. Medical & surgical faculty.
6-9-36*

ENGLISH HEALTH INSURANCE AND THE STANDARD OF MEDICAL SERVICE

by GEORGE F. McCLEARY, M.D.

I FIND myself in this country at a time when questions of the provision of medical care for the poorer people are exciting great public interest, and I attribute that stirring of public interest in no small degree to the issuance of a dynamic document, the report of the Committee on the Costs of Medical Care. That document has been my daily reading since I received it when I landed in San Francisco nearly a month ago, and I am much impressed by the wealth of information which forms the basis of that report; and in reading it I cannot help turning my mind back twenty-five years to a time when in England there was a similar stirring of public interest which also depended upon the issue of a dynamic document, the report of the Royal Commission on the Poor Law.

That report, which appeared in 1908, reviewed not only the administration of the law relating to the indigent, but also the whole question of provision of medical treatment for the wage-earning classes, and although that report was two-fold—because, like the report of the Committee on the Costs of Medical Care, it consisted of a majority and a minority report—both the majority and the minority were agreed that the provision made for medical service to the poorer people was most unsatisfactory and that something ought to be done about it.

The majority recommended the establishment of a system of provident dispensaries. The minority recommended a great extension of the work of the public health authorities. The government decided to adopt neither recommendation but to introduce a scheme of compulsory health insurance

based somewhat on the model of the scheme which Prince Bismarck introduced in Germany in 1884.

Our scheme came into operation twenty years ago, in 1912, and I am often asked what has been the effect of the scheme upon the quality of medical service given to the wage-earners of the country.

In reply, I should explain that the medical arrangements in our scheme rest upon two basic principles: first, that private insurance medical practice shall resemble private medical practice as far as possible; and secondly, that the scheme shall provide each insured person with the services of a family physician.

Now, those are the principles on which our scheme is based, and to give effect to them two conditions are in operation. One is that every physician has a right to undertake the medical treatment of the insured person; and secondly, that every insured person has free choice of physician from among those physicians who have elected to take part in the service. In those circumstances how is the quality of medical service kept up to mark? Before I answer that I would ask how is the quality of medical service kept up to the mark in private medical practice?

Well, there are various circumstances which keep the physician up to the mark. In the first place, the physician is placed every day in contact with suffering people, and the natural reaction of a person placed in such a position is to do what he can to relieve suffering, particularly when he is in possession of special knowledge which enables him to apply himself to that end.

Secondly, the physician is essentially a craftsman. He has spent many years in obtaining facility in a highly skilled and difficult art, and he has in the exercise of his art the joy of creative effort.

Those two forces are in operation to maintain efficiency in private practice. Then there is another, the economic motive. After all, the physician who does his best for his patients and obtains results naturally will get a larger clientele. We all know, of course, that there are charlatans in the medical profession as there are in every profession, and they, too, can amass a considerable number of patients, but in the long run and on the whole, the successful practitioner is the practitioner who does his job in the most competent way.

There are these three influences tending to make for efficiency in private practice. How are those influences at all damaged under our scheme in England? Why should the insurance practitioner because he has accepted service under a great national scheme having for its object the improvement of the health of the nation, why should he, placed in contact with the suffering patient, suddenly become calloused and regardless of his responsibilities? Why should he lose the skill, the joy of the successful craftsman? I see no reason whatever, and it does not happen in fact.

As to the economic motive, that is also present under our scheme, because the remuneration and professional success of the physician depend not upon anything the government or the insurance authorities may do to him, but solely upon the number of insured persons who, in the exercise of their free choice, have chosen to avail themselves of his services.

Then there are other influences. One effect of the insurance scheme has been to create in every insurance area a committee of physicians, the local medical committee, a committee charged with definite public responsibilities. The operation of those committees has had the effect of developing a collective professional conscience in the various areas. The committees are called upon to exercise certain supervisory functions in relation to the practitioners of the area,

and we do find that they approach their public work in no spirit of narrow professionalism, but with due regard to the important public responsibilities which devolve upon them.

The creation of these committees has, in the opinion of those who are best fitted to judge, had an important effect in tending to raise the general level of efficiency of the insurance physicians.

Then again, we have what we might call the disciplinary procedure. We have fifteen thousand insurance physicians in England and Wales, and we have fifteen million insured persons. Now, whenever you get fifteen thousand persons in any rank of life you will have some whose conduct and efficiency falls below that of the standard which should obtain throughout the profession, and therefore it is necessary to give the insured person some way of expressing any feeling of grievance he may have against his physician. He has a right to complain, and if he does complain, his complaint is heard by a local committee consisting of an equal number of physicians and representatives of insured persons.

The number of complaints every year is very small, about 250, and in the majority of cases it is found that the complaint has no substantial foundation. The committee hearing the complaint, as I have told you, is a committee partly consisting of physicians, and that leads me to my last remark, which is, that in our scheme the medical profession play a very prominent part in the administration of the scheme, and particularly with that part of the scheme which is concerned with hearing complaints against insurance physicians. We find, that so far from the outside physicians engaged in this work taking a lenient and narrow professional view of the conduct of their erring brethren, precisely the contrary is the case.

I haven't time to deal with any further aspects of our

scheme. I have just dwelt on that point of the quality of medical service, and I have endeavored to indicate to you in what way the quality of medical service is maintained under our scheme, and I can say from my own personal experience, which coincides with that publicly expressed by the British Medical Association, that our insurance scheme, so far from having degraded, as is sometimes stated, the standard of general medical practice in Great Britain has, on the contrary, had a direct effect in improving it.

SOCIALIZED INDIVIDUALISM¹

by ALBERT G. MILBANK

AT our meeting a year ago we took judicial notice of the fact that the social program of the world was menaced by a threatened collapse of the economic, political, and spiritual foundations upon which it had been reared. A few months later—in the month of June and again only recently—our country found itself peering over the precipice, hovering for a time on the brink, struggling to maintain its foothold, clutching at any means of rescue at hand, and terrified, saving itself—for the time being at least.

With the dramatic inaugural of President Roosevelt on the day when the entire banking system of the Nation ceased to function hope took the place of fear. Dread of what might happen gave way to relief that it had happened and courage among the people rose to meet the courage radiating from their new leader.

Up to then the prophets of gloom had held the center of the stage while the chirpings of the hopeful in the wings had been drowned out by dirge-like selections from Saul's Funeral March.

It seems to me that what has really happened is that we mistook the end of an old era for the beginning of a new. Industrialism after a marvelous, and on the whole beneficent, growth of nearly one hundred years began to develop the defects of its qualities. The competitive spirit and the rewards to the individual were powerful incentives to progress. But, when industry began to forge competitive weapons more ruthless and destructive than the instruments of war and

¹This address, given at the eleventh annual dinner meeting of the Milbank Memorial Fund's Boards of Counsel on March 16, 1933, continues a discussion which Mr. Milbank began in an earlier paper. See Milbank, Albert G.: *Socialized Capitalism*. *Survey Graphic*, July 1, 1932, lxviii, p. 293.

when the rewards to the individual fostered an insatiable greed, the industrial era was threatened with destruction by the very forces that had given it life.

Vanity and greed became the fruits of the Tree of Industrial Knowledge.

The War obscured and halted, for a time, an appreciation of the direction in which we were traveling and then unloosed all the evil forces in one mad outburst of financial frenzy.

Vanity and Greed! England produced her Hatry; Belgium her Lowenstein; Sweden her Kreuger; and America—your imagination can supply at least one name.

What colossal corporate structures were reared by these modern Alexanders and Napoleons! But, if you will examine the motive in each instance, you will find it was either vanity or greed, or a combination of the two. Those motives are bound to result in self-destruction. The evil spirits which entered into the Gadarine swine, driving them into the sea, so that they were utterly destroyed, was probably no miracle at all but merely a whiff of especially luscious swill that stirred their greed and competitive spirit.

But someone will say that vanity and greed are inherent in human nature and someone else has said that "human nature is a unique institution in that it has never been abolished." We can accept both statements as true and yet not lose heart. History is replete with instances where people have changed their viewpoint as to what is of real value to them. At this moment a desire for security outweighs every other consideration—security for one's principal; security for one's income; security for one's job; security against the horrors of another war; security against the rising tide of organized crime; security against the growing indifference to the sanctity of contracts; security for health and happiness.

At no other time, during the past quarter-century, has

the desire for profits been so subordinated to the desire for security. Already this desire has begun to take tangible form. Never before in history could fifty-nine nations, possessed of incomparable machinery for war, have been persuaded to enter upon a Kellogg-Briand Pact in which war was renounced as an instrument of national policy. That covenant was not so much an expression of emotional or reasoned idealism as it was the product of a disillusioned human nature that had found to its cost that war did not pay. The Kellogg-Briand Pact may not, probably will not, prevent war but it does mark a complete reversal of national viewpoint in respect of the value of war as an instrument of national policy. Some time—perhaps before long—we will find that unrestrained competition and the overemphasis of the profit motive in industry not only do not pay but if carried too far will end in catastrophe.

It is only when men are faced by a common danger that they subordinate their selfish interests to achieving a mutual objective. During this period of stress I have seen in Wall Street the lion and the lamb lie down together. The lion, to be sure, was a bit mangy in spots and the lamb had been shorn, but the exigency of their common peril brought about an enforced entente. We will learn, in time, that a certain measure of cooperation is as helpful in good times as it is necessary in bad times.

Underlying the shriller notes of the radicals we hear the undertones of the conservatives who remind us that the economic laws are inexorable. Without challenging this premise it seems pertinent to point out that the Law of Supply and Demand is not of necessity predicated upon maximum profits as the sole purpose of industry. The industrial age, it is true, has fostered that idea so that we had come to regard it as axiomatic, but if men have begun to question

its validity, as in fact they have, just as they questioned the age-old belief that a successful war paid more than it cost, we are on the road to adopt for industry a Pact of Paris that will renounce, as instruments of industrial policy, greedy competitive methods to squeeze out the last drop of realizable profits.

So, also, when we are reminded of the immutability of the law of the survival of the fit, it is pertinent to remark that men will not permit that law to work out to its logical conclusion. If they were so disposed, why the frantic efforts to provide work and home relief? Why the Gibson Committee and the call for federal, state, county, and municipal aid to the destitute? It is because even those who preach rugged individualism have too much heart, when disaster comes, to stick by their intellectual convictions. Men shrink from letting the law of the survival of the fit become the law of the jungle. Hence, charity and the dole and a miscellaneous assortment of unproductive enterprises. But none of these methods suffices to furnish adequate relief and none of them goes to the heart of the trouble.

Charity enforced by high pressure campaigns loses its redeeming spirit of philanthropy. Moreover, you cannot get blood out of a stone—nor, by the same token, out of the stony broke.

A dole, however camouflaged, is a miserable confession of failure to adopt preventive and constructive measures that would make a dole unnecessary. It is very easy to step over the line of making payments to those who cannot work to paying those who won't work, which quickly degenerates into paying men not to work.

Creating enterprises of little or no economic or social value merely for the purpose of creating jobs may be justified on the ground of public emergency, but if the causes back of

the emergency remain uncorrected the emergency becomes chronic and the remedy will only aggravate the disease.

My own belief is that the new era started, not during the postwar prosperity but with catastrophic events beginning in the Autumn of 1929; that each of these events (and there may be more to follow) has been and will be evidence of the corrective processes which always work, unperceived, below the surface during a period of depression just as destructive processes are always at work, unperceived, below the surface during a period of prosperity; that economically the country has been purged of inflated commodity and security values; that the people have become more realistic and more social-minded and are beginning to see more clearly what is of real value and wherein lies their real happiness and well-being.

But, unfortunately, there are still clouds which hide the sun.

It must be confessed that these clouds still create a grave menace and may even yet nullify much that has been accomplished in the past three years. Sound currency, a reconstruction of our banking structure and practices, a drastic cut in the costs of government, a balanced budget, reduced taxation, tariffs and debts, a dependable exchange for international trade, relaxing the rigors of the anti-trust laws, subsidies to afflicted industries and to distressed groups, furnish a formidable array of controversial problems, all within the province of governmental action, that will challenge the wisdom and patriotism of the political leaders whom the people have chosen to give direction to their hopes for a better order.

Shall these hopes be realized by an obstinate refusal to face facts or by courageously facing conditions as they are? Shall they be realized by permitting the State to take an

ever-increasing part, both in the business and social life of the country, or by stimulating the individual to carry his share of responsibility and by clothing business with a new dignity and a new significance? Will business prove its capacity not only to produce and market useful commodities; not only to provide employment; not only to afford opportunities for profitable and safe investment; not only to bear its share of the revenues needed by the State to perform the necessary functions of government, but also to further the social as well as the material needs of the people? If the answer to these questions is that we will rely upon the State, then we may as well admit here and now that we are headed toward a form of State Capitalism with its accompanying feature of a regimentation of the individual. Starting from the opposite philosophical pole we will, if we insist upon calling upon the State to assume those obligations which individuals and organized groups of individuals ought to assume, qualify ourselves for inclusion among Russia's Soviet Republics.

There is no gainsaying the fact that these obligations cannot be avoided. Someone must assume them and the question is, shall we make the necessary provisions in times of plenty to provide for the lean years, or shall we squander our patrimony in riotous living and then depend upon the State, already weakened by the burdens we have placed upon it, to be resourceful enough to find a fatted calf to be slaughtered for the penitent prodigal? What we do now and for the next few years in choosing the course we will follow will have a profound effect on the future of the American people.

Americans are and always have been individualists. There is something essentially fine in their spirit of independence and self reliance. There is something inspiring in their gen-

erosity, ingenuity, and initiative. These are qualities well worth preserving. In our zeal for certain social reforms, we should take great care not to destroy these qualities and weaken the fiber of a great nation.

Now is the time to capitalize this well-nigh universal desire for security. The five major hazards of life are death, accident, sickness, old age, and unemployment. A well-rounded program of social insurance would cover them all. Such a program is not unattainable.

Already group life insurance has made tremendous strides. Workmen's Compensation Acts of the various states make reasonable provision for industrial accidents. Pensions and retiring allowances are common practice. The only risks against which little or no provision has been made in this country are the hazards of sickness and unemployment. Sickness insurance—or more precisely insurance against the costs of medical care—is needed. This, as you know, is recommended by the Committee on the Costs of Medical Care as a voluntary and local measure. But, in my opinion, such insurance will not produce the results contemplated unless the scheme is compulsory and at least state-wide in its scope. The creation of unemployment reserves to minimize, if not wholly insure against, the consequences of lay-offs, whether they be due to seasonal, technological, or cyclical causes would complete the social insurance program.

The question which immediately occurs to one is whether this is the time to ask the industrial goose to lay this golden egg when industry itself is numbered among the unemployed and is quite incapable of laying any eggs at all, much less one of the golden variety.

My answer is that this is the time to seek from the legislatures of the various states action that will commit the states to the principle of unemployment insurance to become

operative when business conditions improve sufficiently to make the plan effective. It has been suggested that the governors of the respective states be empowered to declare the plan operative when the indices of employment and of business activity have reached a point that indicates that industry can sustain the burdens incidental to the plan.

The states should also be asked to provide for the appointment of representative commissions which, through coordinated efforts, would work out a detailed plan of operation. I would like to see the new Secretary of Labor, with her unique experience and rare talents, act as the sponsor for a conference of such state commissions, if appointed, or of representatives of the states if such commissions are not appointed, to insure maximum uniformity and to insure a plan that will not only benefit labor but at the same time be helpful and not harmful to the general financial structure of the country. This plan, it seems to me, should be based on certain fundamental principles.

First, it should be reasonably adequate to meet the strain that will be put upon it.

Second, it should be on a contributory basis and, for the same reasons that the employee's contribution should be limited to a percentage of his wages when received, so the contribution by the employer should be limited to a percentage of profits when earned.

Third, the part to be taken by the State should be restricted to supervision and regulation.

Great care and thought must be given to the handling of the reserve funds as they accumulate in ever-increasing amounts during periods of prosperity—how will they be invested? How will they be made available when needed? What will be their effect upon the intricate financial structure of the country? All these questions present their difficul-

ties, but to my mind the difficulties are not insuperable and the benefits, social and economic, are so incalculable that given a will to solve them their solution may be taken for granted.

In conclusion may I again urge you not to forget the unsolved problems which rest in the hands of the public authorities. Interested as you are in new social reforms, keep constantly in mind the importance of preserving the social gains already won. You can do this most effectively by sustaining the hands of the President in restoring to a healthy condition an economic structure which is showing some signs of convalescence but which may yet suffer a serious relapse unless the treatment, thus far effective under his courageous leadership, is continued.

It is a time when social and labor leaders should make common cause with the leaders of business and finance to support the President in his efforts to solve these problems on sound principles and in a way that will preserve and not destroy those fine traits in American manhood which are essential to the future welfare of the Nation.

You have criticized, and often rightly so, the individualism of the industrialists with their scanty regard for the value of social objectives. We should take good care that we do not become so social-minded that we advocate reforms that will hamper the individual in the development of his own character.

In President Roosevelt's new book, "Looking Forward," which is published today, he makes a statement which heretofore has been associated in the public mind with Fourth of July orations but which, under his leadership, is very likely to become a very practical and realistic factor in the conduct of our affairs. He says:

"We must get back to first principles. We must make American individualism what it was intended to be—equality of opportunity for all, the right of exploitation for none."

SCIENTIFIC MEDICINE AS APPLIED IN TING HSIEN

THIRD ANNUAL REPORT OF THE RURAL PUBLIC HEALTH
EXPERIMENT IN CHINA

by C. C. CH'EN, M.D., M.P.H.¹

I. INTRODUCTION

SCIENTIFIC medicine in its relation to people's health was introduced into China almost a century ago. In fact, it was only a few years after the epoch-making discovery of Jenner that we found vaccination against smallpox practised in Canton. Early in the first decade of this century, the Chinese Government formally recognized the importance of scientific medicine, and when the Republic was formed, a special bureau in the Ministry of the Interior was created to devote itself to the protection of the health of the nation. Since then, medical schools have increased in number and hundreds of intelligent men and women have joined the profession of scientific medicine. Individually, the people have spent millions of dollars each year to purchase "the protection of their health." Years have gone by! What has happened? The National Health Administration reports:

"Generally, there are very few provincial or municipal hospitals except in such provinces as Chekiang and Kiangsu. Most of the hospitals are missionary or private hospitals. They are, on the whole, poorly equipped.

"A survey of communicable diseases has been made recently. With the exception of plague, the legally reportable diseases are prevalent in almost all of the provinces and municipalities.

"In China, as the number of physicians is very small

¹Head, Department of Public Health, Chinese National Association of the Mass Education Movement. This Department of Public Health has received financial and technical assistance from the Milbank Memorial Fund since 1929.

and they are distributed mostly along the seacoast and in the large cities, medical relief in small cities and country places becomes an urgent problem."

All these are the natural consequences of a total lack of organization. Instead of working out solutions of our health problems on the basis of experimental studies, we have drifted into an imposition of the Western pattern of private practice upon the millions of people whose social and economic conditions are entirely different from those of the West. Instead of organizing the practitioners of scientific medicine into a united and progressive force, we have allowed ourselves to pursue the most wasteful line of individual competition. Lastly, instead of building up a system by which the most effective means of protecting the health of the people may be obtained, we have narrowed ourselves down to mere relief of suffering, very imperfect at that.

As over 85 per cent of the population consists of farmers, it is obvious that unless the conditions of the rural population are improved as a whole, China cannot expect to compete on equal terms with the rest of the world. Since 90 per cent of the citizens of the Chinese Republic could not even read and write, the Mass Education Movement over ten years ago started its nation-wide campaign aiming at the elimination of illiteracy. Three years ago, the Movement came to a further realization that the only way to find the content of education for the masses aiming at the enrichment of human life was by practical experimentation in a rural district. The program of the "Ting Hsien Experiment" has subsequently developed on the basis of the "Four Fundamentals of Rural Reconstruction," namely, Cultural Education, Economic Improvement, Public Health, and Citizenship Training.

Social surveys on the various aspects of the farmer's life

THE national significance to China of the public health experiment in Ting Hsien, is being increasingly recognized by those qualified to speak with authority. Among recent commentators, including Dr. Ludwig Rajchman, medical director of the Health Section of the League of Nations; Dr. J. Heng Liu, director of the National Health Administration of China; Dr. Way-Sung New, president of the Chinese Medical Association; and Dr. F. C. Yen, dean of the Medical School of Central University, Nanking, is Pearl S. Buck, author of "The Good Earth" and "Sons." Regarding Ting Hsien, Mrs. Buck wrote recently:

"No one can doubt that China is one day destined to be among the most powerful of modern nations. We of the West, if we have any wisdom, must begin to build for that day. We must build not so much in treaties and diplomatic relationships, which change with the exigencies of time, but in those other deeper relationships with the people, relationships at once more intangible and more solid. We must share with the Chinese the best we have of education, of public health, of science, of all modern equipment for the acquiring of knowledge, for such manifest friendly cooperation will be the soundest basis for future international peace and understanding."

helped to provide a solid foundation of fact on which to build the program. It was found that almost 30 per cent of the people who died in Ting Hsien received no medical attention whatsoever, and 220 of the 472 villages in this district possessed no medical facilities of any kind. In the 252 villages where medical facilities are supposed to be available, there is nothing more than a self-made doctor in each who prescribes and sells drugs at the same time. As a rule, he has never received any modern schooling, and occasionally he may even be illiterate. Yet this is the type of man handling the problem of protecting and promoting the health of the people in Ting Hsien as well as in other districts of this country.

On the part of the people, there is, as one would expect, a total absence of personal and community health consciousness. There

is no sense of cleanliness or of sanitation, either in the streets or in the homes, no knowledge of contagion, nor isolation of infectious diseases. In the delivery of newborns, mud is often used to stop the bleeding of the cord. People drink unboiled water from wells only a few feet from unprotected latrines. Cases of diphtheria and scarlet fever lie in the same bed with the healthy children of the family. It is not at all astonishing that such entirely preventable diseases as tetanus neonatorum and smallpox are responsible for a large proportion of deaths every year.

Travel from one village to the next is extraordinarily painful and slow. Carts are commonly used, but progress is slow at best, through the thick dust in winter and swamps and running rivers in the rainy season. Bicycles are faster, but only the young and strong can hope to use them because the route is often so narrow and rough that one may have to carry the machine for hundreds of feet. It is not at all unusual for a woman with bound feet to walk twenty li (seven miles) with a sick child in her arms to secure a simple medicine or an antiseptic dressing.

Enough has been said to indicate how tremendous is the task of transforming the more or less medieval conditions of an old nation into a progressive modern society. In fact, the general conditions have become so intolerable that many of the natives who are educated along the seacoast or in the large cities never think of returning to their homes. Most of the young men who have had the opportunity of studying medicine in Peiping have settled down there or in Tientsin or Shanghai. Those who have come back home have found practice so difficult that they have been driven to depend upon illegal injections of morphine and promiscuous sales of heroin to maintain their living. There are only two possible ways of meeting the situation, not only in health work, but

in any walk of life. One is to fly the "white flag" in the face of apparently overwhelming odds. The other is to adjust the facilities that we have in such a way that they will give maximum efficiency, both now, and later as our facilities expand. To the workers of the Mass Education Movement, the latter is the choice. Well, what does this choice imply?

First, we must solve our problems in health as in other phases of the people's life according to our social and economic limitations. For example, in Western countries there is already one physician per thousand population, whereas, in China, if we should expect a figure as low as one per 10,000 population to be reached within the next twenty years, a shortage of 35,000 physicians would first have to be overcome. In Western countries, no health officer is expected to concern himself with medical relief, whereas in this country today every qualified physician must be prepared to spend part of his time practising the arts and sciences of healing. Furthermore, a health program in the West which is built on one dollar per capita is generally considered inexpensive; but here in Ting Hsien, the average family consisting of not less than five members pays, as shown by the investigations of our Survey Department, at most \$1.50 Mexican per year for buying "medicines" for the whole family.

Second, we must apply scientific medicine by utilizing the peculiar advantages of our historical and social conditions. For illustration, in Western countries since preventive medicine was developed after curative medicine of a scientific nature had been widely generalized, a separate machinery has evolved for each with evidences of friction between them. China, on the other hand, is still a virgin soil for developing a practice of medicine in its complete form. It would be foolish for China to create a similar division within the field

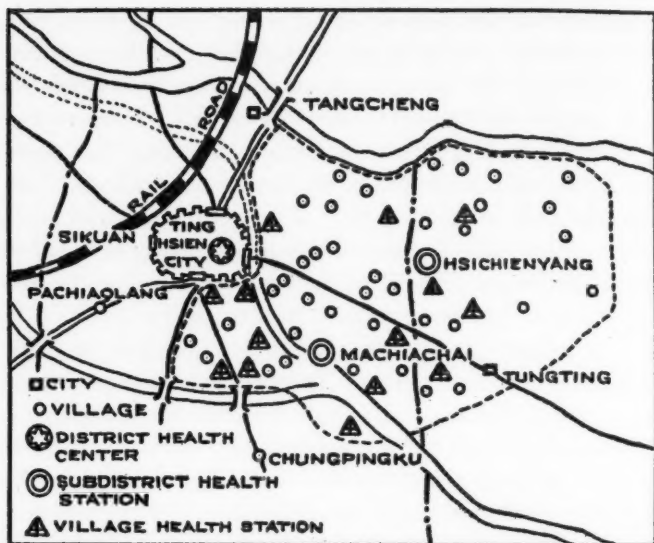


Fig. 1. Map of the experimental health area in Ting Hsien, China.

of scientific medicine, and it would be even more so to evolve an independent machinery for each. In another way, this country is also fortunate in starting late. That is, in Western countries medical education was not planned on the basis of demand and supply. The result is that on the one hand, we find a definite overproduction of physicians and auxiliary workers, and on the other, we see in existence various attempts to make medical service available to a larger population than it is now. Therefore, if we could bear in mind the important question of production and distribution from the beginning, thirty years from now we may be better off, compared with present conditions in the West of frequent conflict between the "practitioners" and "health officers."

Third, as the work in Ting Hsien is not for the sake of Ting Hsien alone, the methods of approach here must, to

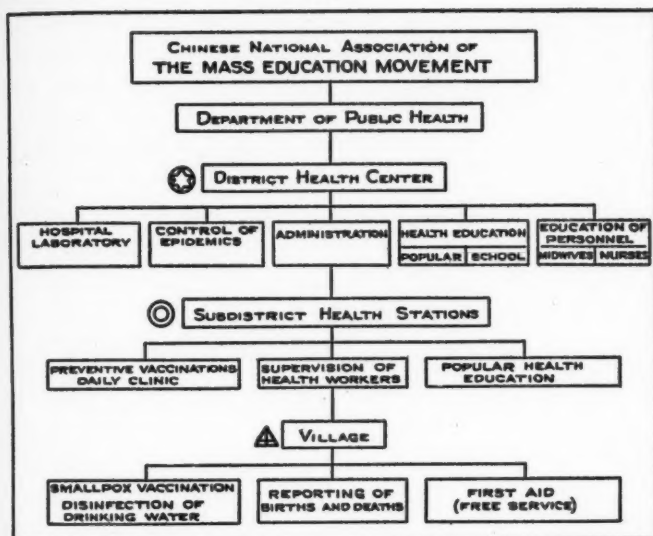


Fig. 2. Organization of the public health experiment in Ting Hsien, China.

a large extent, be applicable in other parts of the country. Supposing the financial conditions of the Movement should permit the employment of different health experts numerous enough to tackle all the problems of the people's health, we might succeed in doing so and build up what one may call a health "Utopia" of this country. But immediately, we would have defeated our own purpose on account of the fact that no other district could afford to duplicate it, and what we had created would amount to nothing more than an ornament.

In 1929, the Milbank Memorial Fund showed its appreciation of the experimental approach to the problem of rural health in China by its appropriation to the Mass Education Movement for the inauguration of public health work as part of the fourfold program of the Ting Hsien experiment.

During the first two years under Dr. Hsun-Yuan Yao, a scaffolding was erected for the building up of a substantial program, and the experience gained by the staff has proved most valuable. In the third year, 1932, there was a reorganization of the entire program of the Ting Hsien experiment, and the original plan of the health phase of it was modified to some extent in purpose and scope as well as in method to achieve maximum efficiency as a health program and maximum coordination and correlation with the work of the Movement as a whole. (Figs. 1 and 2.) What we have been able to accomplish in one year under the reorganized program is hardly sufficient to draw any final conclusions. We have merely created the skeleton of a system of applying scientific medicine in rural China whereby we believe it will be possible to take care of the questions, as they appear in the field of medicine, of demand and supply, of distribution, and of general applicability. We submit this report hoping that it will stimulate criticisms and suggestions that may be helpful in the further development of the program.

GENERAL INFORMATION ABOUT TING HSIEN

Area. Approximately 44 square miles.

Population. This community has 61 villages. The population per village varies from 100 to 2,260. The total population of the 61 villages is 44,190.

Economic Conditions. There are 181,730 *mou* (about 36,000 acres) of productive land. On the average, each family possesses 24 *mou* (about 5 acres). The average income per capita per year is between \$6.00 and \$7.00 (gold).

Educational Status. There are 58 primary schools in the 61 villages. The total budget amounts to about \$5,000 (gold). Since there are about 2,540 children in school, the per capita cost of primary school education in this area is therefore around \$2.00.

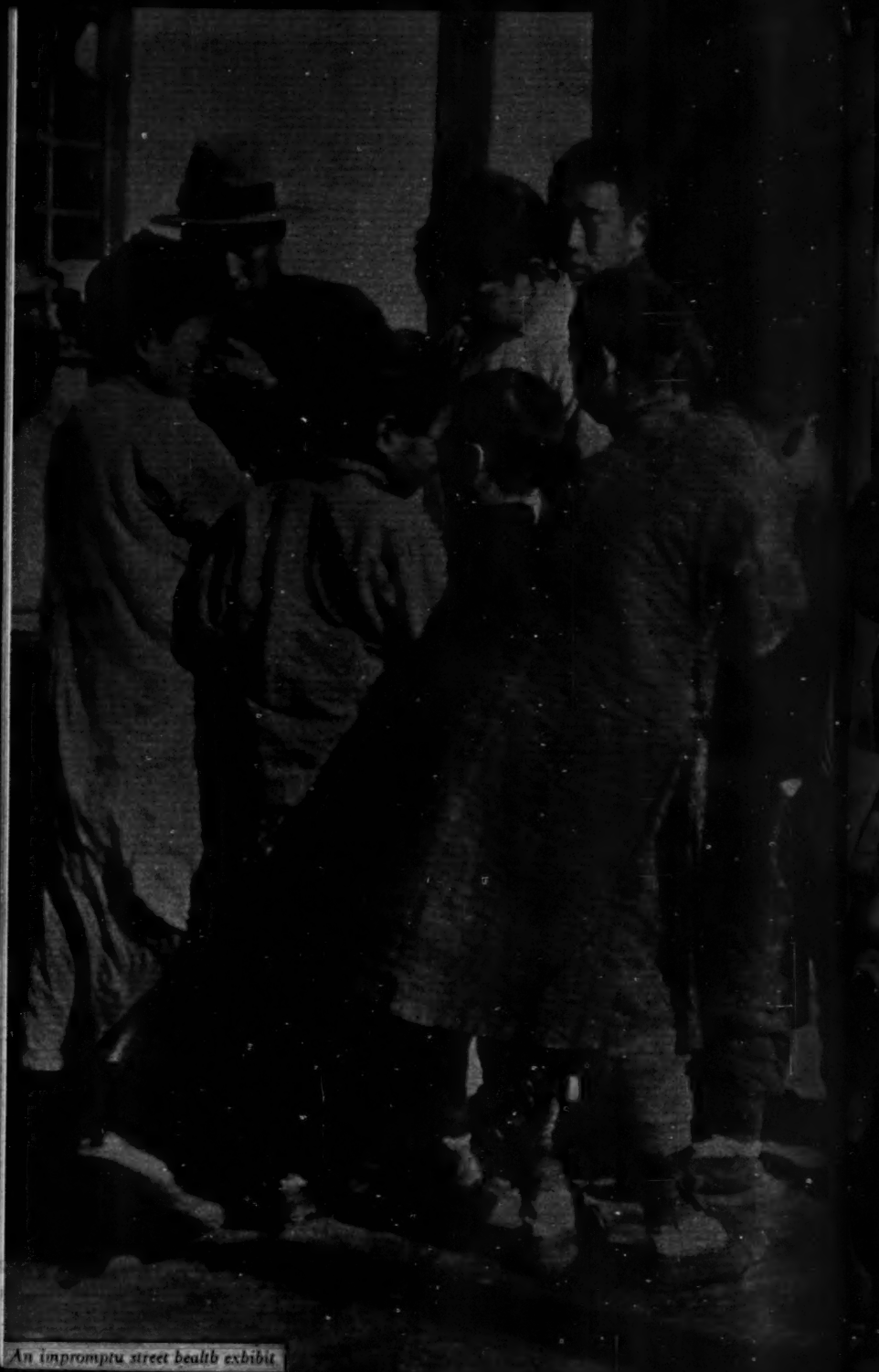
Health conditions may be summarized briefly as follows:

(Continued on page 113)

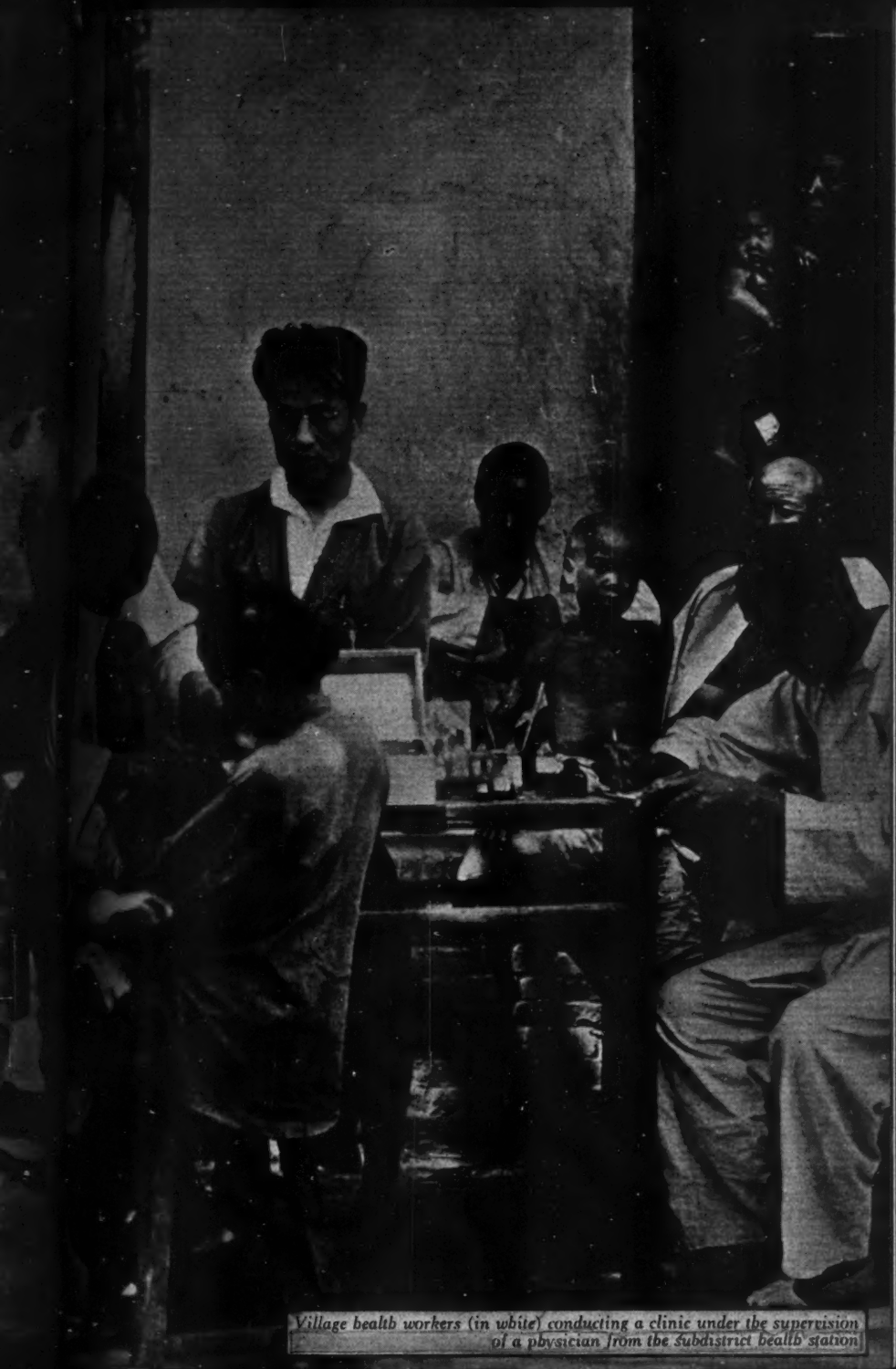
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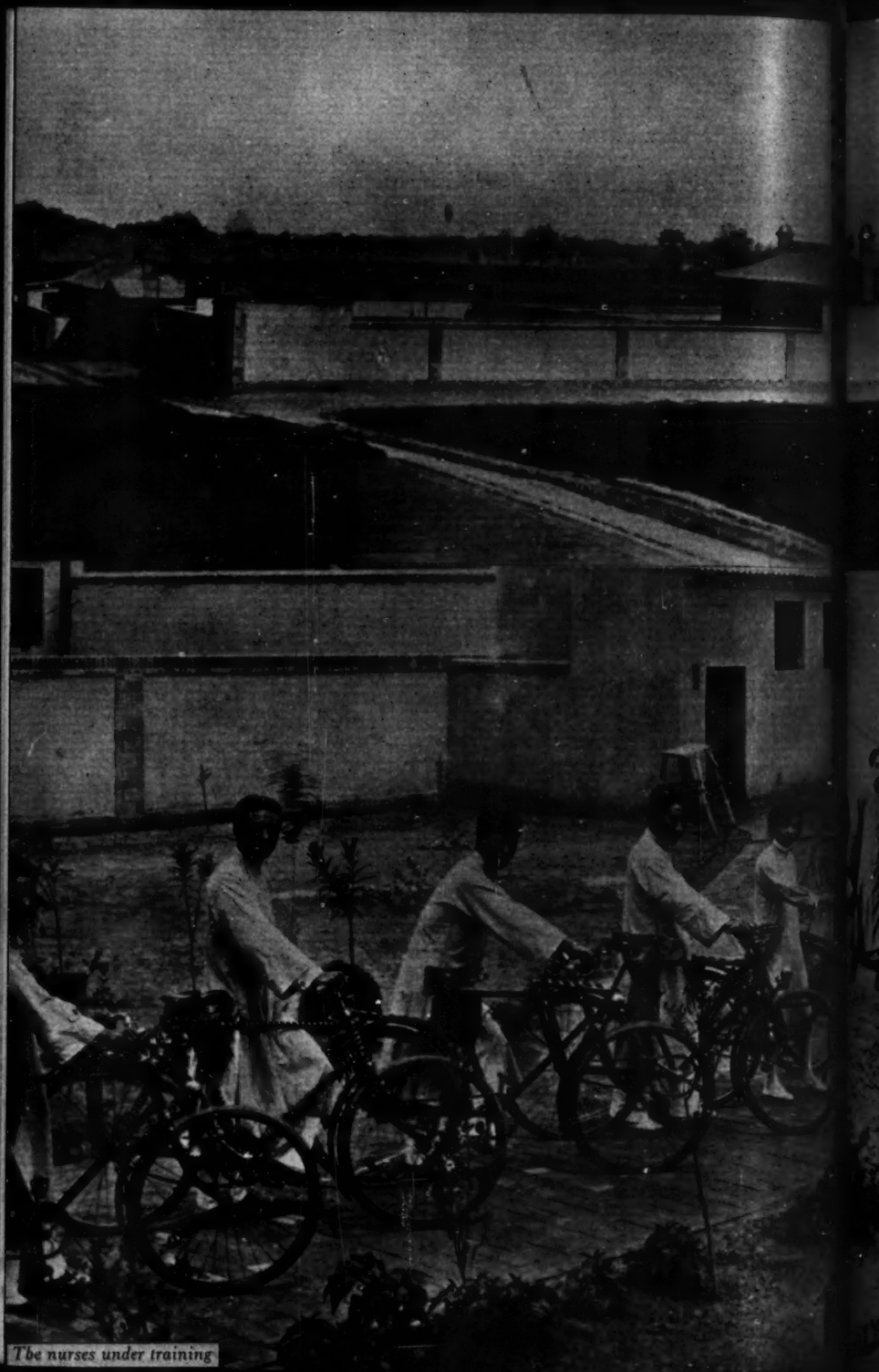
Scientific medicine in a farmer's hand in T'ing Hsien



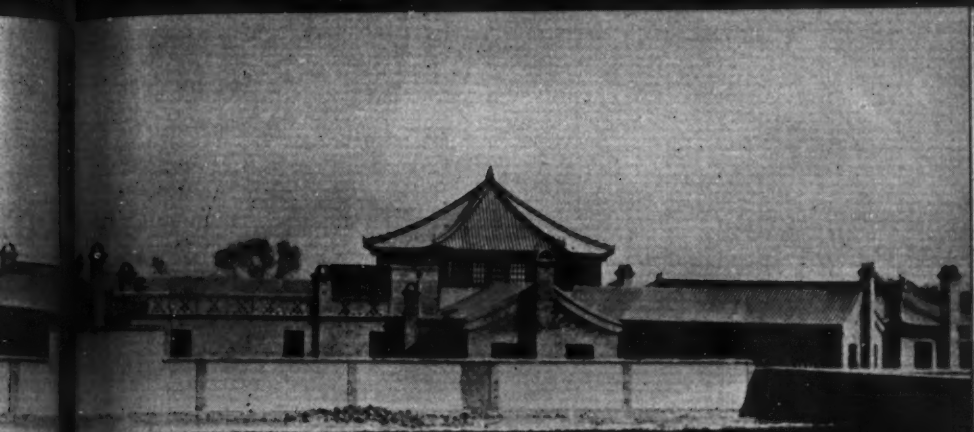
An impromptu street health exhibit



Village health workers (in white) conducting a clinic under the supervision of a physician from the subdistrict health station



The nurses under training



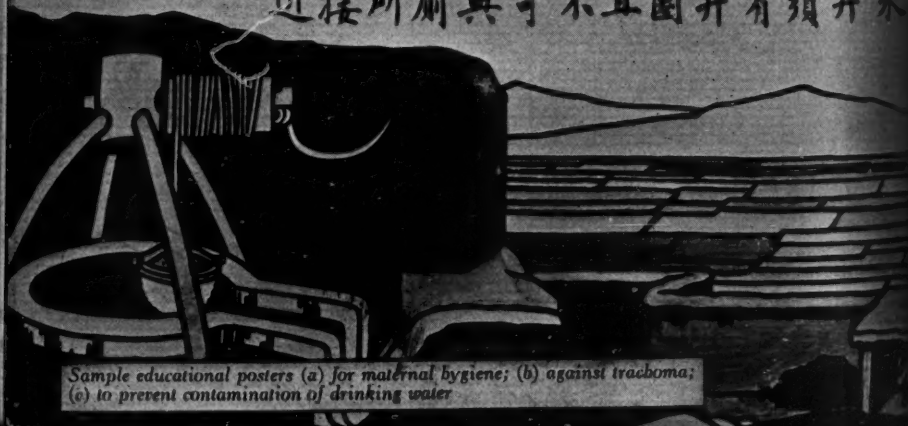
The district hospital has a capacity of fifty beds



Workers in a smallpox vaccination campaign



近接所廁興可不且園井有須井水

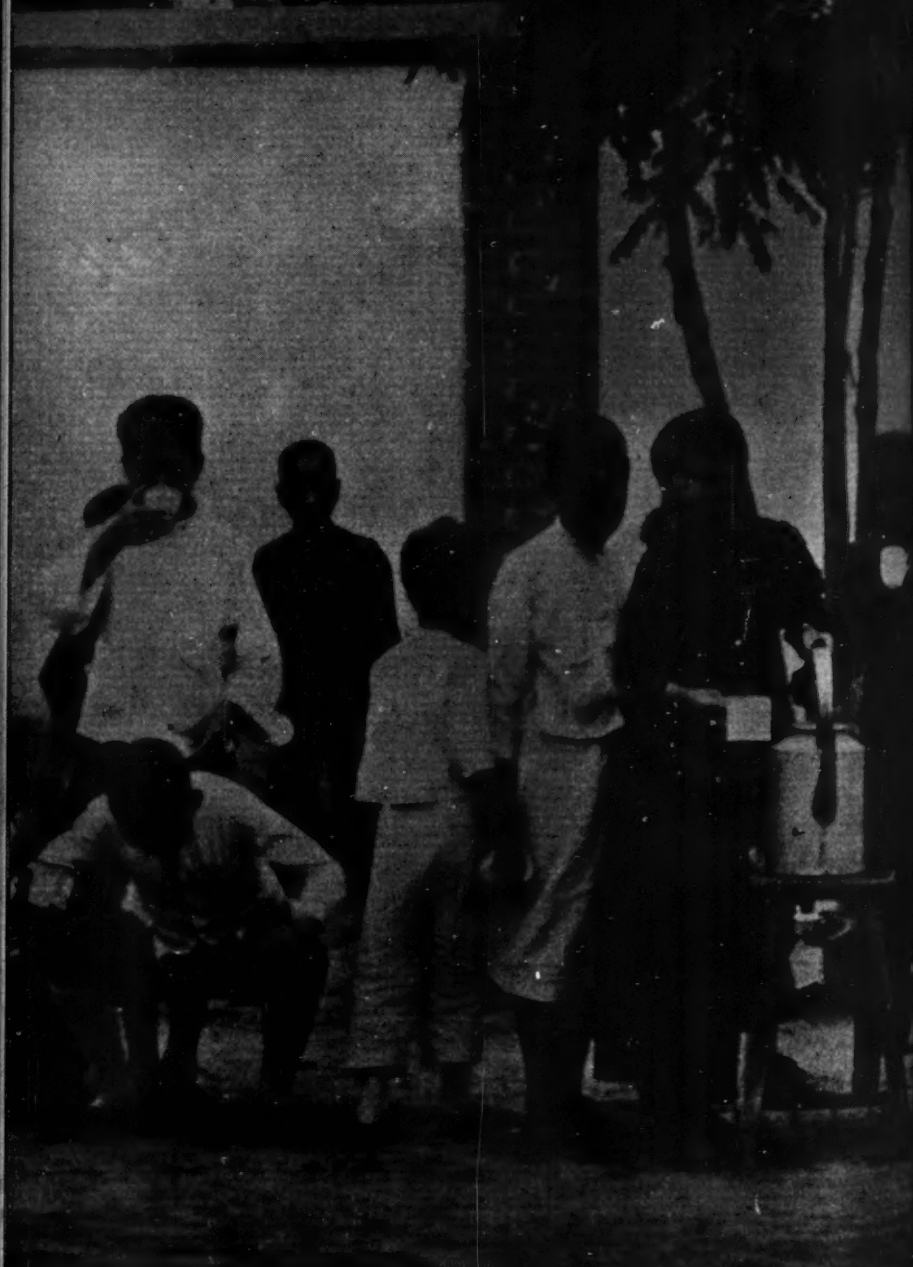


Sample educational posters (a) for maternal hygiene; (b) against trachoma; (c) to prevent contamination of drinking water

Workers in a smallpox vaccination campaign



Midwives with model outfits



Boiled drinking water is provided at the primary schools

1. 31 of the 61 villages had no medical aid that could be considered scientific, and the other 30 villages possessed no medical facilities of any kind.
2. 56 per cent and 15 per cent of the children in the primary schools are infected with trachoma and ring-worm of scalp respectively.
3. Dysentery, summer diarrhea, and typhoid fever are responsible for a great proportion of sickness and sometimes cause many deaths.
4. The chief causes of mortality are tetanus neonatorum, smallpox, scarlet fever, and tuberculosis of all forms.
5. There is no provision for controlling severe epidemics such as that of cholera.
6. As estimated by previous investigation, the general birth and death rates are about 32 and 31 respectively, and the infant mortality is 180 per thousand live births.

II. 1932 IN THE VILLAGE HEALTH STATIONS

In the United States of America, a population of 700 might constitute a small town in which the local government would be held responsible for safe water supply, underground drainage, constant electrification, and possibly a well-equipped hospital. But here in Ting Hsien, 700 people form the average population of a village in the research community. The annual income of the village government does not exceed \$300. As a rule, there is a village school which costs at least \$200 Mexican a year. The \$100 left would be used for all the other liabilities of a village government. Obviously, even if the conditions should be appreciably improved in the coming decade, one village as such would certainly not be able to maintain a qualified doctor or a qualified nurse. On the other hand, unless scientific medicine could reach the villages of this country, it would always be for the few, and the health of the vast population would hardly be affected at all.

The solution as we see it, in the field of health as well as in other lines of social reconstruction, lies in making the farmers themselves first aware of their problem, arousing in them a sense of responsibility for it, and then setting them to work on it. Both in order to deal with the question of economy and in order to wake up the people to help themselves, we are using laymen in the villages as the foundation of our community health system.

The "village health worker" is a graduate of a People's School and a member of the People's School Alumni Association of his village. He has been recommended by the village elder for the position, and has completed a brief course of health training at the subdistrict health station. This course of training required about ten days and covered three things: methods of registering births and deaths, technique of small-pox vaccination, and the use of a first-aid box.

There are generally three stages for the training process. The first is getting the candidates. Since very few people in a village read newspapers and advertisements are slight attraction to the public, the physician of the subdistrict health station, who is the instructor, has to call on the village people personally in order to find his candidates. There has never before been such a person as a health worker, and although there is and always has been a need for one, no villager believes that a period of ten days could make a useful man. So when the Alumni Association is told about the training course, many of the young members would like to try, but all are very sceptical about it. After the Association and the village elders have been, at least to some extent, convinced that it may not be a waste of time, an energetic and intelligent young man is selected. Because it would certainly be inefficient for the instructor to teach one health worker at a time, he arranges for several workers from dif-

ferent villages to meet at a central place, although he knows there may be an interval of two hours between the first man and the last to come to meet the appointment. When they do come together, although they may never have met before, they have a most unusual mutual understanding because they are all graduates of People's Schools. They gather around a broken blackboard, and then the second stage begins.

In teaching how to register births and deaths, for example, the first thing is to show the form and make sure that they know all the characters on it. Then they are given a few sheets of paper and tested for how many common names they can write. As a rule, the Chinese names of infectious diseases are not included in the "Thousand Characters," so in recording causes of death, we have to be content with what a few simple words will express. Thus "Four to Six Day Wind" is tetanus neonatorum, "Heavenly Flowers" is smallpox, and "White Throat" is diphtheria. The registration form is so simple that perhaps no modern statistician would accept it. The experience of the past few months, however, gives us reason to believe that this primitive registration is progressing in its reliability and is capable of improvement.

The real training in "scientific medicine" comes in the third stage which lies beyond the period of ten days, after the village health worker has started working on the health problems of his neighbors. The physician of the subdistrict health station visits him once a week and sees what actually he is doing there, and the village worker comes to the subdistrict health station also to make observations. This stage would last for at least one year until some less time-consuming procedure of supervision is adopted.

The first-aid box contains a skin ointment, an eye oint-

ment, and castor oil, calomel, aspirin, and sodium bicarbonate. These drugs were selected on the basis of four criteria, inexpensiveness, safety, effectiveness, and need, and the list will be modified as time goes on until the four criteria are entirely satisfied. In addition, this box also contains a set of native-made instruments; such as, a pair of scissors, several rolls of bandage, the facilities for smallpox vaccination, and a booklet of record forms. The total cost of the box is \$3.00 and the Alumni Association of each village pays for it. After the health worker has assumed his duties, a signboard is placed in front of his working place for the purpose of identification. Henceforth, he makes reports to the sub-district health station each week. At the termination of one year's satisfactory service, he is remunerated according to definite standards. The remuneration will be made always in the name of his own Alumni Association irrespective of the sources of the money.

Since the health-worker idea is just in its experimental stage, we purposely limited the number to a few until the last part of December, 1932. In December, there were 15 workers who reported 23 births and 14 deaths and gave 1,225 treatments. Weekly disinfections for one month of 318 wells were made.

The experience for the year shows that each village on the average needs about forty cents of drugs a month for 130 first-aid treatments. Each health worker, according to the present standards of remuneration, receives not more than \$1.00 a month. Since the first-aid service in each village is given free of charge, the cost of one treatment is therefore about one cent. Patients who need diagnosis and treatment by a physician are referred to the subdistrict health station with the privilege of a reduced registration fee so as to avoid any possible delay.

III. 1932 IN THE SUBDISTRICT HEALTH STATIONS

Since it is, as already shown, impossible for one or two villages to support a physician, the use of one physician is only justifiable for a group of villages. Then three questions arise:

1. Under the present conditions of transportation, how many villages can one physician with the assistance of auxiliary workers take care of?
2. Under the present social and economic conditions, what types of auxiliary workers could be most effectively used to enhance the efficiency of a physician to its maximum?
3. With the minimum estimate of physicians and auxiliary workers available in this country today and in the near future, to what extent may scientific medicine be applied toward the solution of health problems of rural China?

With these questions in mind, we are conducting an experiment with subdistrict health stations. The experiment has lasted for only a few months and we are far from being able to give final answers. The basis for the experiment, however, is as follows: At least in North China, the villages are distributed in two ways; either a small number of large villages with long distances between, or a large number of small villages separated by short distances. The former are, as a rule, richer than the latter, and the extent to which scientific medicine may be applied by a physician under the two different circumstances is likely to be different. We have accordingly set up two subdistrict health stations in the two types of groupings, one at Hsi-Chien-Yang, which belongs to the first type, and the other at Ma-Chia-Chai, which belongs to the second. It is possible that these two stations will yield different results, with regard both to the population they can serve, and to the readiness with which they may become self-supporting.

Although we cannot be certain of what types of medical

personnel we shall have thirty years from now, yet we have so many rather poorly equipped medical schools that are turning out hundreds of graduates year by year that we should feel quite sure that the ordinarily available type of personnel of today will be the type we can get for many years to come. Furthermore, the graduates of the highest type of school such as the Peiping Union Medical College, are too expensive, and sometimes an entire district may not be able to accommodate even one or two of them. In order to encourage the graduates of the poorly equipped schools (the so-called B-grade schools in this country) to enter into organized practice of scientific medicine, and at the same time to pay attention to the "purchasing ability of the population," we have used only the graduates of the B-grade medical schools. Thus, a subdistrict health station is started with a physician and a dresser whose salaries in total do not exceed \$90 Mexican a month. Experience so far is bearing out the validity of this hypothesis.

In view of the fact that the first duty of the physician in a subdistrict health station is to train and supervise the village health workers and that the village health workers practise both curative and preventive medicine at the very foundation of the health machinery, the doctors, once they begin working in the station, would have to give attention to items that they have never learned in an ordinary B-grade medical school. To supplement their training, therefore, we are developing in the District Health Center a year of "clerkship," six months of which shall be devoted to such subjects as vital statistics, epidemiology, school health, and sanitary engineering. With proper supervision and help from the District Health Center, we feel quite sure that the B-grade school graduates, in spite of their poor foundation, will be used to the fullest advantage of the people. The work of the sub-

district health stations in the last few months has been very encouraging in this regard.

The subdistrict health station is regarded as a strategic location where a community health physician may render the maximum service. It represents a cooperative undertaking of the local people with the Mass Education Movement. (It is of course intended that, after the experimental period is over, part of the Movement will be taken over by the local government.) The latter is responsible for personnel and technical equipment, and the former, for building and furniture. The first station was established in April, 1932, at Ma-Chia-Chai, and the second in December at Hsi-Chien-Yang. In addition to the important work of training and supervising the village health workers, the stations have undertaken a number of activities, the results of which are presented in the accompanying table.

Activities in the subdistrict health stations of Ting Hsien, 1932

Popular Health Education:

Popular talks given	124
Attendance at the talks	21,900
Booklets distributed	320
Pamphlets distributed	2,300
Posters used	51

Preventive Vaccinations:

Smallpox	5,645
Cholera ¹	6,230
Typhoid	93
Diphtheria	63

Daily Clinics:

Attendance	22,126
New patients	7,534
Outcalls	601

¹With the cooperation of the local practitioners in the City.

IV. 1932 IN THE DISTRICT HEALTH CENTER

A considerable number of subdistrict health stations will ultimately be required, just how many is not yet determined, for the practice of scientific medicine in a district like Ting Hsien with a population of 400,000. Since the physicians available today have had no uniform training, it is quite possible that these stations may practise half a dozen "types" of "scientific" medicine, and the result would be lack of uniformity and efficiency. This constitutes the primary need

for a central organization. Furthermore, many ways of protecting health cannot be satisfactorily carried on by the physician at the subdistrict health station singlehanded, and there must be a higher and better equipped organization. The District Health Center is intended to coordinate and supplement all the activities of the subdistrict health stations so that they may be entirely free from administrative conflicts and achieve professional progress of a uniform type. Also, the training of the auxiliary workers of the subdistrict health stations is just as important as the "clerkship" for the physicians, and both types of training for various reasons should and must be undertaken locally. The work of the District Health Center in Ting Hsien for 1932 may be reported as follows:

1. *Administration.* In addition to being the training center of this district, the District Health Center is responsible for experimentation in solving special health problems and for supervision of the subdistrict health stations.

2. *Popular Health Education.* Popular health education in a population where the percentage of illiteracy is extraordinarily high requires special technique. The People's Schools present a unique opportunity for popular health education, and during this year we have taken great pains in revising the old lessons and writing new ones on health for the Thousand Character Text and also for the more advanced classes.

The work in popular health education for the year of 1932 may be summarized as follows:

1. Revision of the Thousand Character Text.
2. A new text for advanced People's Schools containing twelve lessons on health was prepared. It may be interesting to give an idea of the subjects of these lessons, as follows: opium and heroin poisoning; harmful insects—with special reference to flies; "coal" poisoning; drink boiled

water; improve fertilizer by getting rid of flies; prevent contagious disease; smallpox vaccination; dogbite and its care; treat and prevent trachoma; prevent "colds"; soy-bean products; how to stop bleeding.

3. 38,400 pamphlets on medical relief, infectious diseases, sanitation, and maternal welfare were used; 5,090 posters were placed; and 20,550 words in commercial and association newspapers were published.

3. *The District Hospital.* The district hospital building was completed in the Spring of 1932. (The design was drawn up two years before and the construction took nearly a year and a half, some modifications being necessary on account of the reorganization of the program.) At present, it has a capacity of 50 beds, but up to the end of this year only two wards capable of accommodating 26 patients have been sufficiently equipped for use. On account of the differences in social conditions, the facilities of the hospital are naturally planned differently from those of an urban hospital. The patient is charged 40 cents a day, and special charges are made for expensive drugs and major operations. There were 224 patients admitted for whom 2,771 patient-days of care were given. Only 11 were free cases. 62 operations were performed.

4. *The District Laboratory.* Under the present economic conditions in China, one feels that in a district like Ting Hsien there should not be more than one laboratory adequately equipped to do reliable diagnostic work. The district laboratory in Ting Hsien is housed in the hospital. Besides serving the hospital and the field stations of the Department, it is also accessible to the local practitioners. In addition, a small amount of investigative work such as community surveys of parasitic infections has also been conducted in the laboratory. This laboratory is now fully equipped to make urinalyses and examinations of stools, sputum, blood, secretions, and water. In all, 2,410 such examinations were made.

5. *Control of Epidemics.* This year there were two large epidemics, scarlet fever in the spring, and cholera in the summer. For scarlet fever, no organized control was attempted this year because of present social and economic conditions, but popular health education regarding the transmission of this disease was given whenever opportunities arose. For the cholera epidemic, definite and fruitful measures² were taken in cooperation with the local government.

On July 27th, a laborer in the City of Ting Hsien, aged 24, was taken with cholera. He died on July 29th. Then the disease spread gradually in the more populous business section of the City. By the 10th of August there were 26 deaths and 11 cases reported. After the nature of the epidemic had been confirmed, the Department of Public Health took up immediately the question of prevention with the District Government, which was not at all prepared to meet the situation. A committee on Prevention of Cholera was organized early in August, including the magistrate; the four Bureaus—of Police, Education, Finance, and Reconstruction; the Chamber of Commerce; the richest Pawn Shop of the City; and the Mass Education Movement, with the magistrate as chairman. Posters and circulars immediately appeared on all streets, warning the people of the danger of drinking unboiled water, eating fruits and food sold on the streets, and urging them to take preventive inoculations. Twelve policemen from the Bureau of Police were assigned and fully engaged in field work, and the Health Department of the Mass Education Movement was responsible for training, directing, and supervising them.

Since there was no governmental machinery for reporting of deaths or cases of communicable diseases, daily investigation by the police in their assigned sections in the City and its suburbs was enforced. During the epidemic, there were reported 83 deaths and 71 cases in the City and its suburbs. As soon as patients were discovered, they were

²Reported in *Chinese Medical Journal*, xlii, No. 12, December, 1932.

urged to go to the hospital of the District Health Center. Forty-five cases of cholera were admitted and no death occurred. People on the streets began to call the physicians in the hospital "Living Buddha," and patients who refused to go to the hospital were roundly berated by their relatives for their ignorance.

Several private practitioners and drugstores served as vaccination stations against cholera at the request of the Prevention Committee. Including their vaccinations, altogether 6,089 vaccinations were done in the City and its suburbs. Other measures of control were also resorted to and 604 private wells were compulsorily disinfected with bleaching powder. The effect was so evident that "compulsion" was only necessary in the beginning, and toward the middle part of the epidemic people from different villages went to the Police Bureau, begging for disinfection of their wells. The three village health workers we had at that time helped a great deal in educating the people of the villages.

Cases began to disappear at the beginning of September and no case was reported after September 9th. It was the first time that scientific methods in the control of epidemics were applied in Ting Hsien. The district is said to have been invaded by an epidemic of cholera in 1919, resulting in many hundreds of deaths. The significance of the health work in this epidemic lies not merely in the suppression of the epidemic, but also in the education of the ignorant and superstitious masses toward utilization of modern science.

6. *School Health Demonstration.* The importance of school health in rural as well as in urban communities cannot be overemphasized. Especially in the country where only the minority of the growing generation have the opportunity of studying in schools, the one-room schools in the villages, however humble they may be, assume a very important position in radiating the gospel of health. On the other hand, inasmuch as the per capita cost of primary school education itself in the country is about \$8.00 per year only, the health

worker must pay strict attention to the financial end of his school health program. Therefore, as it should be, the teachers of the primary schools have been used as the principal health messengers, and a nurse as general supervisor.

In the primary schools, 26,435 treatments for trachoma, 3,444 treatments for scalp tinea, and 7,212 other treatments were given. In the trachoma cases, corrections were brought about in 51.3 per cent, and in the scalp tinea cases, 82.3 per cent of the cases were corrected.

The dental work in the schools consisted of daily cleansing with coarse cloth and, in 133 cases, cleansing with instruments. In addition, health lessons were given 66 times at different schools, and dental inspections were given 60 times at different schools. Corrections in the treatment of "dirty mouth," gingivitis, pyorrhoea, imperfect closure, extra teeth, and caries, ranged from 40 to 91 per cent. Extractions were made in 175 cases.

There are a number of difficulties in connection with health training in the schools. First, no one in this country has made a study of the desirable and the undesirable habits of the people. As a result, no one is sure of a list of hygienic habits and attitudes to be cultivated among the younger generation. Second, the teachers at work today have not received training in health, and in many instances cannot even appreciate any efforts to teach the subject. Third, it is traditional in all countries that teachers in general value the "Three R's" much more than the children's health. Lastly, the economic backwardness often prohibits integration of a child's training with his daily life, especially when the parents are ignorant of its importance. However, we have carried on experiments of classroom instruction on health, and emphasis is being laid on the single factor of cleanliness. In the classrooms, 337 talks were given with a total attendance of 17,484, and several thousand daily inspections for cleanliness were made.

Therefore, in average, each school had about 16 lessons on health, and each pupil attended 15 health talks during

the year. Daily inspection of cleanliness also shows a gradual shifting upward from C to A, and this may be taken as a distinct evidence of successful health education.

In the normal school for girls with 567 students, a school clinic was held in which 295 cases of trachoma were diagnosed, 3,776 treatments given, and definite improvement indicated in 112 cases. In this school there was organized a class on maternal hygiene for 63 students, and popular talks were given on trachoma and scarlet fever.

A course on general hygiene with special emphasis on health habits has been conducted for a group of 70 students who are trained by the local government to become teachers in People's Schools of the district. These students are sent by the village heads of different villages and the training lasts six months. During the first two months (November and December), 7 lectures in hygiene were given, and 84 treatments were given to 27 students of the group who were found to have trachoma.

7. *Training of Nurses.* Up to December this year, the training of nurses has been carried on for two and a half years. The curriculum for the year of 1932 is made up of 256 hours in didactics, 588 hours in public health nursing, and 744 hours in hospital practice. Special facilities were developed for home visiting. Out of the 1,561 visits made by the staff and the students there were the following varieties: adult health, 22.4 per cent; school health, 20.5 per cent; preschool health, 9.0 per cent; prenatal, 4.8 per cent; infant, 7.7 per cent; postpartum, 7.1 per cent; others, 7.7 per cent.

With such a social background, the students were admitted in July, 1932, to the hospital for full-time bedside nursing work. After the examinations of this summer, nine students remain to form the class.

8. *Training of midwives.* In the villages there is no such profession as midwifery. Every woman who has given birth to a few babies and is over her most vigorous period of life

is qualified to deliver the babies of the younger members of the neighboring families. However, for various reasons, some women, usually about half a dozen in a village, have distinguished themselves in their "operative skill" and are handling more cases than others. If we speak just for North China, these women are probably delivering hundreds of thousands of births each year, yet they have absolutely no sense even of cleanliness. To improve the situation by introducing a sufficient number of well-trained midwives to take the place of these half-dozen in every village would be an impossibility within twenty years. A short period of training to make the faintest connection between the old and the new seems to be unavoidable for the transition. But it was not until the beginning of October of this year that we succeeded in getting personnel competent enough to conduct this type of training, because it requires the best type of mind to teach the poorest of individuals. As an experiment, we selected only four large villages, and in each a course was conducted under the auspices of the village head and the Alumni Association of the People's Schools.

In the meantime, our staff has been delivering births in the district for two purposes: first, to build up the amount of teaching material for future training; second, to serve as a demonstration of modern technique and, indirectly, affect the experiment of training the native midwives.

V. COOPERATION WITH OTHER INSTITUTIONS

In such a brief report, it is evidently impossible to cover every activity of the Department. A word may be of interest regarding the cooperation of the Department with other institutions. It was in the Spring of 1932 that terms of mutual benefit were agreed upon by the Movement and the Peiping Union Medical College, which is the leading medical institution in this country. During the year of 1932, several groups

of its students, including graduate doctors and nurses in public health, the entire senior class, and two clerks who selected rural health as their special interest, came to Ting Hsien. The time of their stay varied from one week to four weeks, and both theoretical discussions and field experiences were scheduled for them. Most of these students were born and brought up in cities. Before they came to Ting Hsien, they had no idea of what the villages of their own country looked like. Consequently, the experiences in Ting Hsien not only initiated them in technique of rural health work in country districts, but also deepened their sympathy with the suffering masses and broadened their vision of what life work among them might mean. In the meantime, the College rendered to the Department a great deal of professional and administrative assistance. Professor J. B. Grant visited our work twice during the year, and Dr. I. C. Yuan, the statistician of the College, has taken an active part in making a health survey in the research community, the results of which shall be reported later.

Cooperation has also been secured from the National Health Administration. On account of lack of experienced sanitary engineers in this country, the National Health Administration last summer was generous enough to lend us their chief sanitary engineer to map out a program of rural sanitation for us, and right now we are contemplating sending a young graduate of an engineering college for training at Nanking. Dr. Marion Yang, director of the National Midwifery School, which is functioning under the auspices of the Ministries of Education and of Interior, also during the year paid us a visit and made many valuable suggestions in regard to our maternity and child welfare work.

SUMMARY

The work of the Department of Public Health of the Mass

Education Movement, as it has developed during 1932, may be summarized as follows:

Vital Statistics. A system of registration for births, deaths, and causes of deaths is being evolved. It is inexpensive and progressing in its reliability.

Health Education. The health material in the "Thousand Character" which is enjoying a circulation in millions in this country has been completely revised by a member of our staff, and the same member has written the twelve lessons for a new text of Higher People's School. For the primary schools, a program including classroom instruction (in average 15 times in the year) has been in practice. For the Girls' Normal School, a required course on maternal and child hygiene has been conducted for two of its senior classes, including an hour a week for two semesters. For the public, over 40,000 new posters and pamphlets were circulated, and popular lectures were also attended by thousands of people.

Maternity and Child Welfare. Four groups of native midwives (27 women) of four large villages have been given a short course of training and put under the supervision of a qualified midwife. Compared with previous years, the amount of obstetrical service rendered by the staff has also much increased.

Medical Relief. Full-time first-aid service is now available in 15 villages of the research community. Any individual of the community now does not need to travel more than 15 li (5 miles) to secure the service of a qualified physician, and our physicians during the year have attended to more than 20,000 treatments. To supplement the services of the subdistrict health stations in their medical relief work, a modern hospital has been in function since July, 1932, and has been used by more than one patient per bed per month.

Sanitation and Control of Communicable Diseases. More than 900 private and public drinking wells were disinfected with the assistance of local police. In the spring campaign

against smallpox, about one-seventh of the population was vaccinated against the disease. Now, in 15 villages of the research community, facilities for smallpox vaccination are constantly available at no cost to the people. During the cholera epidemic this summer, with the cooperation of local practitioners, more than 6,000 vaccinations against cholera were given, largely to the population of the City which is around 13,000.

Laboratory. A well-equipped laboratory in charge of an experienced person has been functioning since October, 1932, and it has taken over 1,000 specimens each month. It is being utilized by the hospital, by the subdistrict health stations, and for special studies.

School Medical Service. Over 40,000 treatments of various kinds were given to about 1,200 students. Out of 353 cases of trachoma, 50.8 per cent were practically cured. Of 102 cases of tinea of scalp, 82.3 per cent were also removed from the schools. In May, 1932, there were 2,566 major and minor dental defects among 1,170 school children. At the end of the year only 799 were left.

More important than the foregoing individual items of work is the formation in this year of a system of practising scientific medicine which is built on the Alumni Associations of the People's Schools and is capable of expansion at a very low cost. It is our belief that only organized community efforts, however feeble they may be, will produce an efficient and far-reaching machinery for solving fundamental problems in health as well as in other phases of life.

FUNDAMENTAL FACTS ON THE COSTS OF MEDICAL CARE¹

by I. S. FALK²

I

IT is my privilege to give you an aeroplane view of problems in medical economics. Adhering to a discussion of problems, I shall not occupy your time with a review of what is good, effective, and praiseworthy in the medical world. Of necessity, I deal with ills and with a diagnosis, not with a prescription of treatment.

For the facts in the case, I draw upon the studies conducted by the research staff of the Committee on the Costs of Medical Care.³ These apply variously to the years 1928 to 1931—years which run the gamut from good times to bad through a “boom” period. Since the completion of these inquiries, the country has plunged into a new and more acute stage of the economic recession. The facts which I present, however, apply not to the chaos of an emergency, but to the emergent chaos of so-called normal times.

In 1929, and in each year or two immediately preceding and following, the people of the United States received medical services and consumed medical commodities worth three

¹A summary presented to orient a round-table conference on the costs of medical care, held at the annual meetings of the Boards of Counsel of the Milbank Memorial Fund, March 15, 1933. This paper is a preliminary fraction of a larger study undertaken by the Fund on ways of applying the insurance principle to problems in the provision of medical care and in meeting the costs.

²Formerly associate director of study (in charge of the research staff) of the Committee on the Costs of Medical Care.

³For a complete summary, consult Falk, I. S.; Rorem, C. Rufus; and Ring, Martha D.: *The Costs of Medical Care: A Summary of Investigations on the Economic Aspects of the Prevention and Care of Illness*. Chicago, University of Chicago Press, 1933. Tables and charts are reproduced from this volume (and other reports of the Committee on the Costs of Medical Care) with the permission of the University of Chicago Press.

and two-thirds billions of dollars or 4 per cent of the then current national income. The sources of the funds and services for which the expenditures were made are shown in Table 1. Of the grand total, federal, state, and local governments provided from tax funds 14 per cent, philanthropy supplied 5 per cent, and industry 2 per cent. The remaining 79 per cent was paid from the private purses of families and individuals. Figure 1 shows the sources of the funds and Figure 2, the agencies to whom the expenditures are made.

II

One million, one hundred thousand persons earn their livelihood in the service of providing medical care. Six

Table 1. Total expenditures¹ for medical care in the United States.²

SERVICE	TOTAL	SOURCES OF FUNDS				PER CAPITA (1929)
		Pa- tients	Gov- ern- ments	Phi- lan- thropy	Indus- try	
TOTAL	\$3,656	\$2,886	\$510	\$182	\$79	\$30.08
Physicians in private practice ³	1,090 ⁴	1,040 ⁴			50	8.97
Dentists in private practice ³	445 ⁴	445 ⁴				3.66
Secondary and sectarian practitioners	193	193				1.59
Graduate nurses, private duty	142	142				1.17
Practical nurses, private duty	60	60				0.49
Hospitals: operating expenses	656	278	300	54	24	5.40
Hospitals: new construction	200		100	100		1.64
Public health	121		94	28		1.00
Private laboratories ⁵	3	3				0.02
Orthopedic and other supplies ⁶	2	2				0.02
Glasses ⁶	50	50				0.41
Drugs ⁶	665	665				5.47
Organized medical services ⁶	29	8	16	7	5	0.24

¹All figures in millions of dollars. Discrepancies which appear in this table are due to the use of rounded numbers.

²With a few minor and unimportant exceptions the data apply to the year 1929. They are probably representative of any normal year of recent times.

³Physicians and dentists holding part-time salaried positions are included with private practitioners. Expenditures for the services of those employed in hospitals, clinics, public health departments, and organized medical services are included under total expenditures for the respective agencies.

⁴These totals include payments by government and philanthropic agencies to private practitioners for services to indigent persons.

⁵Not included in other items.

⁶University, industrial, and Army and Navy medical services, exclusive of hospital care.

⁷\$310,000.

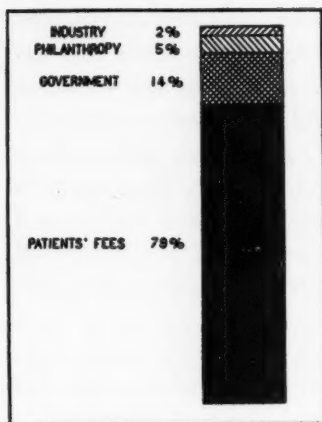


Fig. 1. Sources of medical funds.

billion dollars of the nation's capital are invested in the plant and equipment of medicine. This service "industry," whether measured in terms of invested capital, annual expenditures, or personnel, ranks fifth or sixth in the nation.

The provision of medical care is more than an industry, even as medical service is more than a commodity. He who purchases medical service has little or no basis for critical

judgment of what he seeks; he who supplies medical service is judge both of the patient's needs, of the time and conditions of sale, and—not unusually—of the price. Only within certain important limitations is medical service an economic commodity, subject to prevailing forces of supply and demand. There are psychological and emotional factors which nullify any purely economic analysis of the economics of medical care. These words are not introduced merely "to make the riddle harder"; they touch upon an essential aspect of the subject. They must not be lost from sight.

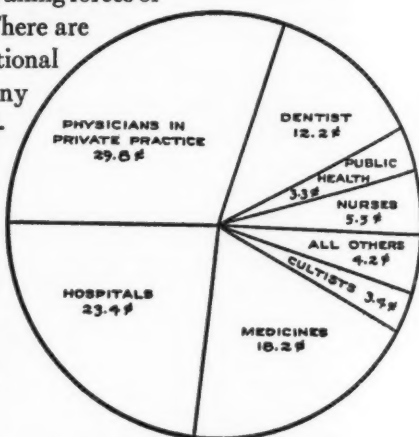


Fig. 2. How we spend the medical dollar.

III

The total expenditures for medical care are divided almost equally between private practitioners and institutions. You will note in Table 2 that 1.9 billions of dollars are spent for the services of 554,000 private practitioners; the remaining 1.7 billions of dollars are spent for services rendered in medical institutions, for commodities (chiefly drugs and medicines), and for the remuneration of the 530,000 persons engaged in these activities and enumerated in Table 3. Of expenditures for private practitioners, the lion's share falls to the 121,000 physicians. Dentistry and nursing are the next largest items. Among the institutions, hospitals consume 856 millions, drugs and medicines 665 millions, public health 121 millions, and all others 90 millions. These are, perhaps, the essential facts concerning the composition of the nation's

Table 2. Personnel in private practice and expenditures for their services.

Practitioners ¹	Number	Expenditures		
		Total	Per Cent	Per Capita
TOTAL	554,100	\$1,930,000,000	100.0	\$15.88
Physicians	121,000	1,090,000,000	56.5	8.97
Dentists	56,800	445,000,000	23.0	3.66
Graduate nurses	118,000	142,000,000	7.3	1.17
Practical nurses	150,000	60,000,000	3.1	0.49
Midwives	47,000	3,000,000	0.2	0.03
Chiropodists	4,900	15,000,000	0.8	0.12
Optometrists	20,200	50,000,000 ²	2.6	0.41
Osteopaths	7,700	42,000,000	2.2	0.35
Chiropactors	16,000	63,000,000	3.3	0.52
Naturopaths	2,500	10,000,000	0.5	0.08
Religious healers	10,000	10,000,000	0.5	0.08

¹Including part-time personnel.

²Including glasses which they dispense.

bill.

The national bill for medical care amounts to 4 per cent of the national income. Certainly this cannot be considered an excessive burden. Consider the fact that in the same years in which we customarily spend 3.66 billions for medical care, we spend more than 20 billions

for luxuries, amusements, and nonessentials of various sorts. If standards of good medical care call for larger expenditures, an additional billion or two—that is, up to 5 or 6

per cent of the national income—could be spent for medical service in normal times, and *if spent on a national basis* would still induce no hardship.

If the national bill for medical care (public and private) were equally distributed among the people of this country, the annual charge would be \$30 per person or \$123 per family.

For the white population, the fraction of the total medical bill which is paid from private—as distinguished from public—purses is equivalent to an average annual charge of \$23 or \$24 per person or \$108 per family. This average of \$108 per white family for the private purchase of medical care is a composite average which takes into account the averages for families of different economic levels and living in various types of communities (Fig. 3), and the proportions in these different levels or communities in the years 1928-1931. You will observe that the average cost for families in each income class is in general higher in large than in small communities. You will note, also, that from the poorest to the wealthiest families the average cost increases tenfold. If the average cost for all families combined were distributed among families uniformly according to annual income, each family would have to spend 4 per cent of its income and, we might say, there would be an end of the problem of medical costs, even if 95 per cent of the people had to shoulder in addition the costs for the 5 per cent who in normal times are indigent or semi-indigent.

Table 3. Personnel in medical institutions.

Personnel	Number
TOTAL	530,400
Physicians	21,000
Dentists	5,600
Graduate nurses	77,000
Student nurses	80,000
Public health, visiting, and industrial nurses	18,800
Pharmacists	132,000
Lay personnel ¹	196,000

¹In hospitals and clinics and in public health agencies.

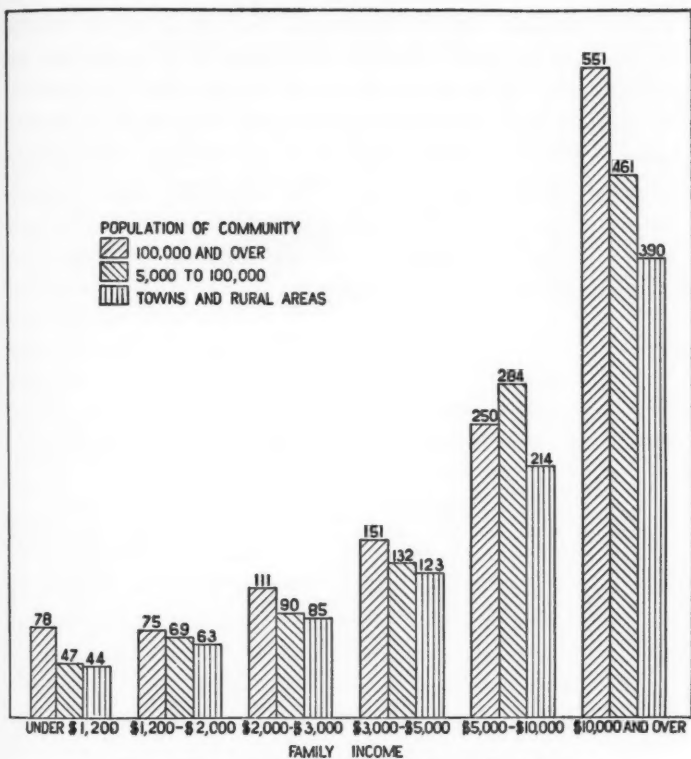


Fig. 3. The average annual charges for medical care.

Unfortunately, the costs of medical care are not like the costs of food, clothing, or shelter—fixed and regular within the reasonable limits determined by the spending habits of an economic class and by the standards of living. The purchase of food or clothing and the payment of rent recur regularly; and except for those whose incomes are below the minimum for reasonable subsistence, to procure these essentials involves only the common problem of living within one's means. Unlike the costs of food, clothing, and shelter, the

cost of medical care is determined only to a minor extent by regular, periodic, physiological need; it is dependent almost entirely upon the incidence of sickness and the receipt of medical care. The financial obligation for medical service would create no special problem if the average incidence of sickness applied with comparative regularity and certainty to each family or to each individual. How irregular the incidence actually is appears from the following figures. In a normal year, of all individuals:

- 47.1 per cent have no illness
- 32.2 per cent have 1 illness each
- 13.6 per cent have 2 illnesses each
- 4.8 per cent have 3 illnesses each
- 1.6 per cent have 4 illnesses each
- 0.7 per cent have 5 or more illnesses each

Variations like these recur year after year; but no individual or family can anticipate whether it will be the one to experience a year of life with little or no illness or the one that will be heavily loaded with the need for medical care.

These percentages, applying to a composite population like that of a typical 100,000 in the United States, give a fair picture of the situation for families at each level of the economic ladder. Furthermore, the costs of sickness vary even more than the incidence of sickness, because of variations in both the kinds and the amounts of care needed and received.

In each income class, only about 10 or 15 per cent of the families incur charges approximately equal to the average for all families in the class; a large proportion of the families normally incur small charges; and the remaining families incur charges which range from the average to five, ten, or even twenty times the average. The facts are summarized in Table 4. For the family so fortunate as to need little or no

medical care during a twelve-month period, the costs present no problem. For the families with charges of the average amounts, or twice the average, there is no serious problem except for those with the most meager incomes. But what of those whose medical charges attain the levels of three, four, six, eight, ten times the average—that is, 12 to 40 or 50 per cent of income?

The average charge for all families in a normal white population is \$108; but it will be noted in Figure 4 that charges of less than \$60 each are incurred by 58 per cent of the families and their medical costs are only 18 per cent of the total; charges of \$60 to \$250 each are incurred by 32 per cent of the families and their costs are 41 per cent of the total; the 10 per cent who incur charges of \$250 and more each, become

Table 4. The variation in family charges. Percentage distribution of families in different income groups according to total charges for medical care; based on data for 8,581 white families with known income, surveyed for twelve consecutive months, 1928-1931.¹

INCOME GROUP	AVERAGE CHARGE	PER CENT OF FAMILIES WHOSE TOTAL ANNUAL CHARGES WERE IN THE SPECIFIED RANGES									Total
		Under \$10	\$10-\$20	\$20-\$40	\$40-\$60	\$60-\$100	\$100-\$200	\$200-\$500	\$500-\$1,000	\$1,000 and Over	
ALL INCOMES ²	\$108.14	15.9	12.8	17.4	11.7	13.7	14.9	9.9	2.7	1.0	100.0
Under \$1,200	49.17	30.7	18.1	20.2	10.4	9.9	5.9	3.8	0.9	0.1	100.0
\$1,200-2,000	66.81	18.9	15.5	20.2	14.3	13.0	11.0	6.0	0.9	0.2	100.0
\$2,000-3,000	94.84	12.9	12.3	17.5	11.7	16.2	16.8	10.4	2.0	0.2	100.0
\$3,000-5,000	137.92	8.6	8.1	12.9	10.7	17.3	23.3	14.7	3.6	0.8	100.0
\$5,000-10,000	249.35	3.1	5.3	12.1	7.5	12.5	23.6	23.3	9.6	3.0	100.0
\$10,000 and over	503.19	1.2	1.4	6.9	2.2	4.1	26.1	25.3	16.1	16.7	100.0

¹Excludes 58 families with unknown total charges.

²For all income classes combined the proportions of families in the several classes have been adjusted to the income distribution which prevailed in the years 1928-1931.

responsible for 41 per cent of the total bill. Is it any wonder, then, with one family in ten in this last class, that there are members of the community, in no negligible numbers, who

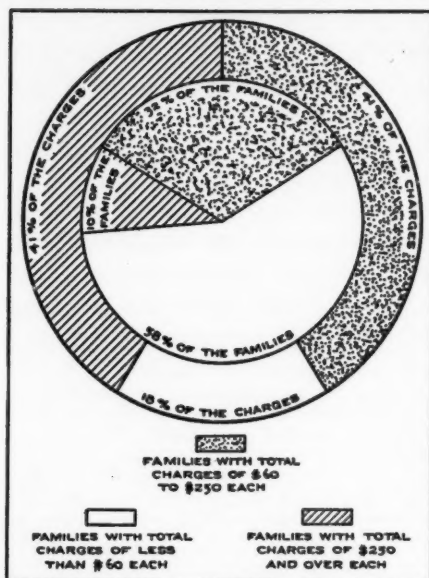


Fig. 4. Charges and the families which incur them.

edly and involuntarily, the amazing thing is that there has been in the United States so complacent an attitude toward the financial burdens created by an essential of modern life.

IV

There will be no sound understanding of dissatisfaction with the costs of medical care until it is recognized that the drain of medical charges upon the family purse is of two quite different kinds: the costs of frequent and comparatively inexpensive illnesses or medical needs and the occasional occurrence of the so-called "high-cost" illness. The difference is of fundamental importance to the family. The

raise their voices in protest and fill the air with complaints against "the high cost of medical care"? Is it remarkable that magazines carry a steady stream of diatribes against the burdens of medical costs? Is it surprising that those who incur large charges pay only 50 to 90 per cent of their bills? Considering that heavy medical charges are generally incurred unexpect-

occasional, or even frequent, incidence of minor illness and comparatively small costs for medical care may be easily and complacently absorbed in the family budget; but the occurrence of a "high-cost" illness, even when moderate rates are charged for each unit of service, may be a financial catastrophe for the family of small or modest means. At the one extreme, medical care for a "cold" or an attack of some other minor respiratory disease or for a minor digestive disturbance costs, on the average, \$6; at the other extreme, a case of pneumonia costs, on the average, \$59, a confinement \$95, an appendicitis \$168, a cancer \$342. Even each of these figures is an average among widely varying costs.

Infection, organic disease, and malfunction are not respectful of persons or considerate of the state of the family exchequer. Large costs may fall upon small purses. Experience shows it is futile to caution people that these uncertainties are certain. The plain fact is that families do not and will not individually budget against a cost which fluctuates within a very broad range and which may even attain a magnitude which cannot be budgeted—for a family's medical cost may, in the extremest case, exceed annual income. Individual budgeting provides an answer only for wealthy families and for those families of moderate means so fortunate as to have but few illnesses which involve extensive, costly, or protracted professional care.

V

An attack upon the problems presented by variations in costs must be predicated upon knowledge of the factors responsible for the variations. It has already been seen that variation in the incidence of illness is first among the causes. Variations in incidence and in the nature of care entailed by illness are not subject to economic regulation. As the next step, we may inquire which types of medical service are

principally responsible for the variations in costs. To what extent would variations in total costs be eliminated in a group of families if the costs of particular types of services were budgeted among groups of families or were paid by taxation or insurance? To this point it is possible to direct quantitative answers.

The average medical bill of \$108 per annum among white

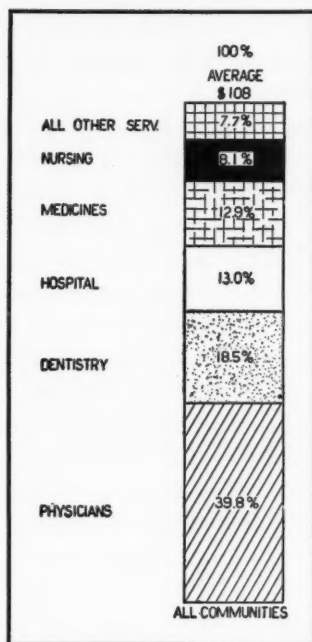


Fig. 5. Composition of the average medical bill among white families.

families has the composition shown in Figure 5. Though the proportions differ somewhat among families at different income levels and among families living in communities of various sizes, the differences are neither large nor important. The purposes for which the expenditures are made are shown in Figure 6 and the types of illness for which the expenditures are made in Figure 7. The most important points in these two charts are that (1) the private purchase of medical care is almost entirely for curative—as distinguished from preventive—service, and (2) in all income classes and regardless of the size of the average costs, illnesses which involve hospitalization are responsible for one-half the total costs.

Furthermore, a study of variations in the costs of each type of service (physician, dentist, hospital, drugstore, nurse,

et cetera) demonstrates that among families in each income level variations are common in four (physician, dentist, hospital, and nurse). The extent to which the responsibility rests on each was determined. This was accomplished, for groups of families, by measuring how much variation remains in their total bills after the actual costs incurred for each type of service are in turn replaced in the records by the average cost for the service. In other words, each family in a group is presumed to have a total charge such as it might have had if it had been paying for a particular service (or a combination of services) on an

insurance instead of on an individual basis. Such an analysis reveals that the responsibility for variation in costs is broad and rests upon all the important types of service—physician, dentist, hospital, and nurse. Averaging the costs of any one, or two, or three of these solves part of the problem created by variations in costs. If the costs for a particular group of families are to be brought within a range which extends only reasonably above and below the average for the group, the averaging process (or insurance) must include all four—physician, dentist, hospital, and nurse. Less than this leaves each family with an appreciable probability that its own annual costs will attain burdensome magnitudes.

VI

Up to this point we have considered only the problems of

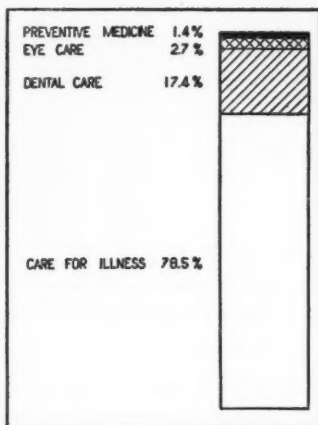


Fig. 6. Percentage of charges incurred for curative and preventive services.

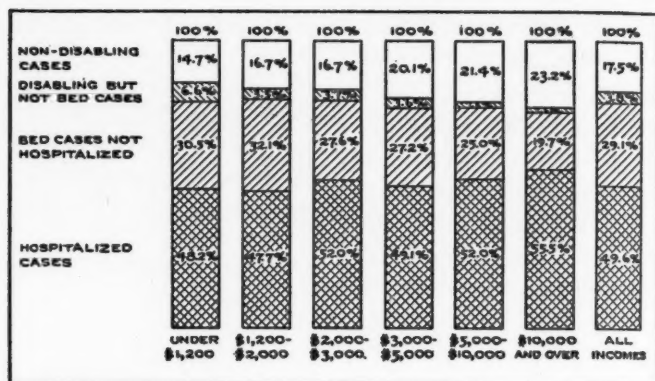


Fig. 7. Percentage of family medical costs due to illness of a specified severity.

costs. Questions of quality and adequacy have been ignored. Many of the findings from recent studies (particularly the community and the family surveys conducted by the Committee on the Costs of Medical Care) are *prima facie* evidences of moderate, sore, or even wanton neglects and very few give evidences of pampering medical excesses. Comparisons of care that is received by representative groups with reasonable estimates of care that is needed demonstrate that neither the rich nor the poor receive the care which they need. The deficiencies appear in respect to care of all major types (except the purchase of commodities in the drugstore) and are especially notable in the receipt of dentistry and of preventive services from physicians. The benefits which medicine offers are on the whole very inadequately realized.

Nor is the lag between the availability of skill and its utilization determined by costs alone. Other contributing factors include widespread public ignorance of opportunity, deeply rooted spending habits, the excessive use of self-prescribed pharmaceuticals, resort to quacks and charlatans,

DEGREE OF SPECIALIZATION	GROSS INCOME		NET INCOME		RATIO OF NET TO GROSS INCOME	
	Mean	Median	Mean	Median	Mean	Median
ALL PRACTITIONERS	\$9,461	\$7,026	\$5,700	\$4,100	0.602	0.584
General practitioners	6,421	5,245	3,900	2,900	0.607	0.553
Partial specialists	9,995	8,292	6,100	5,000	0.610	0.603
Complete specialists	16,304	12,239	10,000	7,500	0.613	0.613

Table 5. Average gross and net incomes of physicians in private practice, according to degree of specialization, 1929.

and—among urban people—a helplessness and incapacity to search out the medical service needed from the welter of practitioners and agencies which are available. Indeed, the diatribes of the laity against modern medical practice are directed as much against the lack of integration of facilities under trustworthy authority and against the difficulty of making a safe and judicious selection of physician, dentist, or hospital, as against the costs themselves.

VII

The uneven burden of medical costs upon individuals and families has its counterpart in the uneven distribution of income among the physicians, dentists, and nurses who minister to them. The *average gross* incomes of physicians, summarized in Table 5, imply reasonably adequate remuneration; but the *average net* incomes introduce some doubt on this point, for 40 per cent of the physician's gross income is consumed by professional expenses. Substantially the same is true for dentists. When the incomes of these practitioners are examined to see how many receive the average and how many larger-than-average or smaller-than-average incomes, the issues are clarified. This is readily evident from Figures 8 and 9 which show the variations in the net incomes of physicians and dentists.

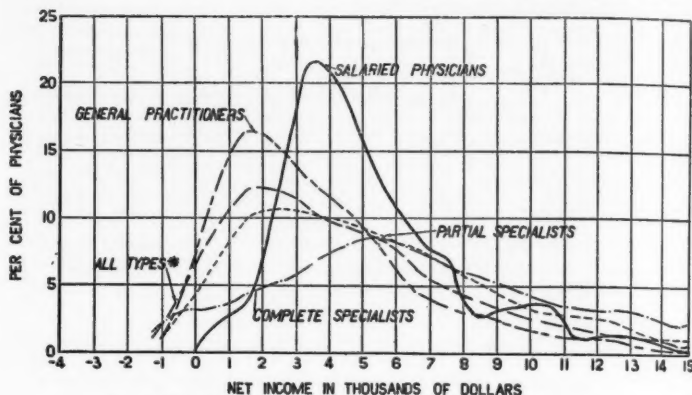


Fig. 8. Variation of net income among physicians in 1929.

The average income of the physician or dentist no more describes the economic status of the individual practitioner than the average cost describes the problem of the individual family. If \$2,500 be arbitrarily taken as the amount below which net income may be termed inadequate by definition, it is found that even in the heyday of 1929, 33 per cent of the physicians and 22 per cent of the dentists had inadequate incomes (40,000 physicians and 12,500 dentists). If the standard be set as low as \$1,500 per annum, about 18 per cent of the physicians and about 8 per cent of the dentists fell below even this point. The people who complain against the high costs of medical care, and especially against the charges of physicians, consider only the large income of the financially successful practitioner. They are not ordinarily aware that for every physician who receives more than \$10,000 as an annual net income, there are two who receive less than \$2,500.

If time permitted, it would be interesting to call to your attention the evidences which place the responsibility upon two factors above all others—excessive specialization within the profession of medicine and the inability of most people

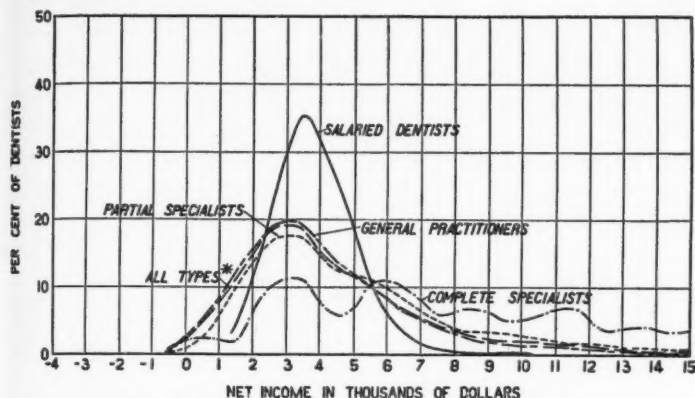


Fig. 9. Variation of net income among dentists in 1929.

to spend adequately for the services they need because they pay for medical care on a fee-for-service (i.e., pay-as-you-go) basis. The extent of unemployment among physicians is so large that even in 1929 the services which they rendered could have been supplied by little more than 50 per cent of those in active practice if each of these had had a reasonably complete quota of patients to provide full utilization of working time.

The private practice of nursing was in desperate economic straits even in 1928 and 1929. The supply of graduate nurses has increased rapidly, from 16 per 100,000 population in 1900 to 240 in 1929. These numbers are exclusive of 77,000 graduate and 80,000 student nurses in American hospitals and 150,000 untrained nurses. Employment for even the well-trained nurse is intermittent and income is inadequate even in "good times." Unemployment is increased by the graduation of approximately 25,000 students annually from the 2,000 hospitals which conduct nurses' training schools.

The present situation is unsatisfactory alike to nurses and patients. The graduate nurse finds private duty nursing

an overcrowded field, in which she cannot look forward to professional advancement or substantial increase of professional income. The patient objects to the high fees for nursing service (\$5.00 to \$8.00 per day) and goes without needed care which the unemployed nurse would gladly provide. An economic barrier stands between them. How shall they remove it?

VIII

The hospitals of the United States are facing a financial crisis which has been approaching for several years. Hospital capacity has been adequate for general care, although inadequate for patients afflicted with tuberculosis or mental disease. Although large numbers of people go without needed hospital care because they cannot afford it, general hospitals are on the average occupied to only 65 per cent of capacity.

The present demand for "free service" in both government and private nonprofit hospitals has emphasized the need for more adequate and more stable revenue. Of the \$656,000,000 spent annually for operating costs, approximately \$302,000,000 is paid by patients through the medium of fees, \$54,000,000 represents contributions and endowments, and about \$300,000,000 is derived from taxation. Most of the \$302,000,000 from fees is paid not by the 120 million potential patients but by the 5 million "pay" patients admitted to the nongovernment institutions for acute medical and surgical conditions. Most of the \$300,000,000 spent by governments is used to support hospitals for nervous and mental and tuberculosis cases, or the treatment of "indigent" patients requiring general medical or surgical care. Voluntary contributions have greatly declined. Endowment income, which reached its maximum with \$20,000,000 in 1929, shows little prospect of growth in the near future.

A crying need is the stabilization of hospital income and

the development of administrative arrangements whereby the economic barrier shall be removed from the path of the individual who needs hospital care, without, at the same time, placing an impossible burden of charity service upon the hospital. To recognize the difficulties which the costs of hospitalization entail for many families, it is important to carry in mind these facts: (1) though only one family in five receives hospital care, hospital costs are responsible for 13 per cent of all costs to the average family; (2) though the average hospital bill is about \$50, this is only 39 per cent of the average cost (\$140) of a hospitalized case when professional charges and other costs are added to the hospital bill. Illness which involves hospitalization, it will be recalled, is responsible for 50 per cent of all costs to families. Thus, even though the hospital's bill may of itself be moderate, it usually comes as one more bill in a series which may have been and may continue to be long. The hospital's bill is not uncommonly the proverbial last straw, especially since its payment must usually be made at once. This quality of hospital costs is of the essence in the problem of financing the hospitals of the country. We must think of hospital costs and the burdens they involve, not in terms of \$5.40 per person in the United States, but in terms of \$50.00 per average hospital patient or \$140.00 per average hospitalized case.

IX

If the degree of utilization of physicians, dentists, nurses, and hospitals is the measuring rod, one must conclude we have too many physicians, too many dentists, far too many nurses, and too many general hospital beds. But this conclusion is specious on at least two grounds. (1) The distribution of personnel and facilities follows the dollar, not the need. Where there is spendable wealth, there are physicians, dentists, and hospitals—usually in excess; where there is little

spendable money, there is a dearth. Our metropolitan areas are oversupplied; many rural areas are undersupplied. (2) The measuring rod—current rate of utilization—is one which modern society cannot accept. Acceptance would mean complacency with the forces which are responsible for the fact that people do not receive the medical care which they need.

If the supply of medical personnel and institutional facilities were adequate for the true need for medical care, we should need more physicians, far more dentists and dental assistants, more public health nurses, more private duty nurses, more hospital beds than we now have. This is evident in Table 6 where the personnel and facilities which were available in 1930 are compared with the estimated need.

Table 6. Personnel and facilities available and estimated number needed in the United States in 1930.

PERSONNEL AND FACILITIES	PER 100,000 POPULATION		FOR UNITED STATES	
	Number in 1930	Estimated Number Needed	Number in 1930	Estimated Number Needed
Physicians	126	142	144,000	173,848
Dentists (1928)	56	$\left\{ \begin{array}{l} 179^1 \\ 99^2 \end{array} \right\}$	68,000	$\left\{ \begin{array}{l} 219,444^1 \\ 121,081^2 \end{array} \right\}$
Public health and visiting nurses ³	16	44	18,800	54,032
Home and hospital nurses ⁴	99	176	118,000	216,128
Hospital beds:				
General ⁵	328 ⁶	462 ⁷	452,010 ⁸	566,833 ⁷
Mental	350 ⁶	558 ⁸	437,919 ⁸	685,740 ⁸
Tuberculosis	52 ⁶	138 ⁸	65,940 ⁸	169,427 ⁸
Total hospital beds	730 ⁶	1,158	955,869 ⁸	1,422,000

¹Calculated on the assumption that dentists work without technical assistants.

²Based on the assumption that X-ray and laboratory technicians and dental hygienists perform all but chair work. The total number of these subsidiary persons required would be 109,007.

³Including industrial nurses.

⁴Staff nurses in hospitals and sanatoria are included in this count.

⁵Includes in addition to general hospitals, maternity; industrial; convalescent and rest; isolation; children's; eye, ear, nose, and throat; orthopedic; skin and cancer; hospital departments of institutions; and all other hospitals, exclusive of nervous and mental and tuberculosis.

⁶Compiled from the American Medical Association Hospital Register, 1931.

⁷Assuming an occupancy of 300 days a year.

⁸Assuming an occupancy of 340 days a year.

I hasten to add, however, that this is no plea for hasty expansion of personnel or facilities. Until the public is educated to recognize the full need for—and the full value of—medical care, until the population is more generally able to pay for these services, increasing personnel and facilities would merely increase the so-called “normal” degree of unemployment among physicians, dentists, and nurses, and would increase the number of unoccupied hospital beds. Administrative and economic problems must first be solved before the receipt of medical care can be commensurate with true need and the demand for care justify a larger medical equipment for society.

X

The primary objective of our consideration is to provide adequate medical care to the people as a whole. I have touched upon the increased personnel and facilities which this concept of adequacy entails. With pardonable temerity, we may face the question of the cost of adequate care. One of the detailed studies of the Committee on the Costs of Medical Care has provided quantitative estimates of what may be meant by “good medical care.” Applying 1928-1931 cost figures to these estimates—with due allowance for elimination of obvious wastes and with adjustment for the accumulated medical neglect of years—it appears that reasonably adequate medical care would cost approximately \$36 per person for the types of service ordinarily purchased by people privately. The largest single item in this total, \$10.70, is for dentistry; all other recommended services would cost about \$25.30 per person.

These estimates are independent of the form of organization of personnel and facilities. Other studies of the Committee on the Costs of Medical Care have shown that, with well-designed organization, large economies are possible in

providing medical service without sacrifice of quality and with larger and more stable financial returns for the professions. Assuming effective organization, the estimated costs can be reduced from \$36 to \$25-\$30 per person. In addition, the cost of good medical care would require, instead of what we now spend, about \$1.25 per person for the institutional care of the tuberculous, about \$2.85 per person for the institutional care of the mentally diseased, and about \$2.50 (instead of the present average of \$1.00) per person for public health activities. All told, good medical care calls for approximately \$32 to \$37 per person (we spend about \$30). How much of this should lie within the sphere of governments and how much should remain in the field of private purchase, may be disregarded for the present. The question is, can the people of the United States pay these costs?

The concept of adequate care and of its cost—as presented above—is an average. If people had to purchase most of it individually and privately, services and costs would be distributed in the same erratic and uneven way as prevails at present. The problem of paying the costs would be the same in kind but larger in degree than is the case for present-day practice. A close study of the point shows that the burden of costs would be great or too great for the 90 per cent of the families who in normal times have annual incomes below \$5,000.

If the costs were met by the entire population (or some substantial fraction of the total as a unit) and if all incomes were charged *pro rata*, the total cost of adequate care would constitute no serious burden for the country. If the cost were distributed on an insurance basis—i.e., each family were to pay an equal amount regardless of income—the burden would probably be large or too large for the 50 per cent of all families whose incomes are ordinarily under \$2,000.

If the costs of adequate dentistry are subtracted from the total and treated separately, it is probable that uniform, periodic payment of the costs for other care would not be burdensome for 85 to 90 per cent of the families. Adequate dentistry would still remain beyond the financial reach of 50 per cent of the families.

These considerations of ability to pay must be faced, remembering that the cost figures cited are in a sense minima. They have already assumed elimination of wastes through: (1) efficient organization and administration and reduction of overhead in professional practice; (2) reduction of excessive medication; (3) wise location and efficient operation of hospitals and clinics; (4) conservation of the funds wasted on incompetent practitioners (primary and secondary) and on cultists and quacks.

Among some groups it has become almost a pastime to lay the blame for the burden of medical costs on the drug-store and the cultists. Others frequently imply that most of our troubles would be over if these expenditures were eliminated and other recognized wastes were curtailed. We should not fall into the habit of taking these delusions too seriously. The obvious savings which are possible would amount to three-quarters of a billion dollars a year, or 20 per cent of the total bill in a normal year. But to effect savings of these kinds would, in the best of circumstances, be a slow, difficult, and arduous task, for spending habits are deeply rooted and ignorance is not easily overcome. Even granting that these savings were effected, the facts in the case point conclusively that the major problems of medical costs would still wait on other solutions.

At this point I should like to offer one suggestion. In principle it is obviously desirable that any plan designed to equalize costs should also discourage waste. Experience in

many places has shown that it is possible to combine these two desirable objectives. I would go further. I know of no successful going organization which equalizes costs whose success does not in greater or lesser measure depend upon the fact that it reduces wastes and familiarizes the beneficiaries with the path to authorized medical agencies. By comparison with what has been and is easily accomplished in the reduction of wastes through organized medical agencies operating under insurance plans, reduction in wastes by educational measures alone is costly and ineffective. Economy and efficiency tie reduction of costs and elimination of wastes to equalization of costs.

XI

To recapitulate: 1. The cost of medical care in a normal year of recent times consumes 4 per cent of national income. The cost of medical care purchased privately consumes 4 per cent of family income.

2. If the costs were equably spread over the entire national income, they would involve no considerable burden.

3. The essential problem in costs for the individual family is their uneven, uncertain, and unbudgetable size, for the individual family bill ranges from 0 to more than 100 per cent of annual income.

4. The care received by the people is inadequate in amount and is at many points and in many cases measurably below professional standards of good quality.

5. The incomes of practitioners are not, on the whole, excessive and for large fractions are not even adequate.

6. Unrestricted specialization, uncoordinated establishment of facilities, and uneconomical distribution of personnel and institutions are responsible for extensive wastes, overcrowding in some places and undersupply in others.

7. The prevailing fee-for-service tradition is chiefly respon-

sible for many of the real and apparent burdens of medical costs to the family, and for the expenditure of smaller sums than the need for care requires and the means of the people permits. By the same token, the fee-for-service basis is also principally responsible for inadequate financial support of practitioners and institutions.

8. Adequate medical care is within the nation's means if the costs are met on a national basis. This assumes distribution of the costs over all people and according to their means. Next to this, distribution of costs on an insurance basis brings the costs nearly within the means, but still leaves burdens even if fixed insurance payments are smaller in the classes with low incomes and are larger in the classes with high incomes. On an individual basis, adequate medical care is a luxury beyond the means of a large proportion of the people.

The analysis of ability to pay has tacitly or explicitly assumed the economies and the professional advantages which accrue from such efficient organization and operation of practitioners and agencies as experience in certain well-conducted medical services has shown to be possible.

All of you are aware that in the United States there is a ferment at work, in experimentation with means of distributing the costs of medical care and with ways of coordinating and integrating the provision of medical service and reducing its costs. Many of the experiments have served effectively and efficiently to solve (in part or in whole) the problems of medical costs for groups of people and for localities. Others, though working towards these ends, have introduced new problems and even new evils. But these in turn must be solved by careful study and administrative revisions, not by discontinuance of the experiments.

NEWS DIGEST

© © © *The Fund's Advisory Council Holds Its Eleventh Annual Meeting*

ROUND-TABLE discussions of questions concerning the costs of medical care, public health nursing, tuberculosis control, and population problems occupied the opening sessions of the eleventh annual two-day conference of the Fund's Advisory Council, held at the New York Academy of Medicine on March fifteenth and sixteenth.

Under the chairmanship of Homer Folks, secretary of the State Charities Aid Association, one group considered methods of making available adequate medical care for all residents of the United States. I. S. Falk, formerly associate director of study of the Committee on the Costs of Medical Care, summarized the factual data accumulated by the Committee. Mr. Falk's summary, which served as a basis for discussion of the whole problem, appears on ear-

lier pages of this issue of the *Bulletin*. The outline of a further study which is being undertaken by the Fund into proposed methods of providing medical care was presented by Edgar Sydenstricker, director of public health activities of the Fund, who was also a member of the Committee. Professor C. E. A. Winslow of the Yale University School of Medicine, Surgeon-General Hugh S. Cummings of the United States Public Health Service, and Dr. George F. McCleary, outstanding authority on national health insurance in England, were among those who took an active part in the discussion.

A second group, presided over by Professor Robert E. Chad-dock of Columbia University, reviewed the population studies recently carried on with the assistance of the Fund. Professor Raymond Pearl, of The Johns Hopkins University School of Hygiene and Public Health, presented a progress report on

his study of the prevalence and effectiveness of contraceptive practices in a defined population group. The results of a follow-up study of patients of the Birth Control Research Bureau were presented by members of the Fund's staff engaged in the work. Dr. Robert L. Dickinson, secretary of the National Committee on Maternal Health; Dr. Hannah M. Stone, medical director of the Clinical Research Bureau; and Dr. Walter F. Willcox, professor emeritus of economics and statistics at Cornell University, contributed to the discussion.

Public health nursing was discussed by another group from the special viewpoint of the determination of objective tests for measuring the effectiveness of the profession's activities. As chairman, Lillian A. Hudson of Teachers College, Columbia University, reported the group's special interest in this time of economic stress in formulating recommendations leading to the more efficient and widespread use of the existing public health nursing facilities of the official health agencies. Katherine Tucker, general director of the National Organization for Public Health Nursing, commented on the value of the studies by

the Fund's staff in determining necessary objective tests.

The effectiveness of different methods of case-finding in relation to cost in different areas was considered in reference to tuberculosis by the group under the leadership of Dr. Charles J. Hatfield, executive director of Henry Phipps Institute, Philadelphia. Dr. John H. Korn, director of the Bureau of Tuberculosis, Cattaraugus County Department of Health, summarized the experiences of the County as a typical rural area. Dr. Margaret Witter Barnard, medical director of the Bellevue-Yorkville Health Demonstration, reviewed the methods of case-finding in a metropolitan area. Similar activities in New Haven were described by Dr. H. R. Edwards, director of the Bureau of Tuberculosis in that City; and in Syracuse by Dr. George H. Ruhland, Syracuse Commissioner of Health.

The chairmen of these four groups presented summaries of the round-table discussions at the general sessions of the Council on the second day. At this time, Dr. Reginald M. Atwater, Commissioner of Health for Cattaraugus County, who had just returned from Europe, told of his visit to Sir Arthur News-

holme and of experiences in Geneva, at the League of Nations Health Service headquarters, and in Czechoslovakia. Dr. C.-E. A. Winslow's review of the results of the two-days' conference concluded the meeting.

• • • *The Annual Dinner Meeting of the Fund's Boards of Counsel*

DISTINGUISHED guests from distant countries addressed the Fund's Boards of Counsel at the annual dinner given by the Board of Directors on March sixteenth. This meeting, with Dr. Livingston Farrand, president of Cornell University, presiding, marked the close of the annual two-day conference of the Fund's advisory groups.

Dr. George F. McCleary, formerly principal medical officer of the National Health Insurance Commission of England, spoke on the English plan of health insurance in practice and described how it had raised the standards of the medical profession. (See p. 83.)

With her intimate knowledge of life in China, Mrs. Pearl Sydenstricker Buck, author of "The Good Earth" and "Sons," commented on the many important contributions made to China

through the health demonstration in Ting Hsien, sometimes called the "Cattaraugus County of China." Referring to the Fund's share in the work, Mrs. Buck said: "You are not only contributing to the public health of China, but you are contributing scientifically to the knowledge of the world." Edward C. Carter, secretary of the Institute of Pacific Relations, referred to the far-reaching effects of the public health dollar in Ting Hsien, where "the health program is an integrated part of the total program of the entire district, of children's and adult education, of government, and of economic reconstruction."

Albert G. Milbank, president of the Fund, in a survey of present-day economic and social conditions, emphasized the part that the individual must play in any state or national scheme for protection against the "five major hazards of life—death, accident, sickness, old age, and unemployment." Mr. Milbank's complete address is published in this issue of the *Bulletin*.

A resolution expressing appreciation of President Roosevelt's "courageous and effective efforts to restore economic stability" was adopted by the Boards of Counsel.

● ● ● *The Commission on Medical Education Reports*

A SHIFT away from standardized teaching in medical schools to the development of the student as an individual is approved in the final report of the Commission on Medical Education, under the chairmanship of President A. Lawrence Lowell, of Harvard University, which was organized in 1925 by the Association of American Medical Colleges.

The Commission welcomes the tendency of many medical schools to "emphasize learning by the student in contrast to teaching by the faculty." It adds that a general aim should be "to prepare the student to continue his own self-education throughout his professional life."

"Entrance requirements should be flexible and not too specific," says the Commission, which holds that besides "a grasp of the principles of chemistry, physics, and biology" the "primary qualifications should be character, ability, personality, industry, resourcefulness, intellectual capacity as measured by scholarly achievement."

The medical courses should be general and there should be less

stress on teaching by specialists, and a larger emphasis on the art of medicine and of the mental, emotional, and social factors in the case of the patient. The internship should aim to equip the young doctor for independent practice, even in communities where specialists, hospitals, laboratories, et cetera, are not available.

Regarding the license to practice the Commission reports a widely held opinion that this "should be granted directly on the basis of graduation from an approved medical school and completion of a satisfactory internship."

Dean Willard C. Rappleye, of the College of Physicians and Surgeons, was the director of study for the Commission, and the final report, a handsomely printed volume of 560 pages, is issued from his office at 630 West 168th Street, New York.

● ● ● *Activities of the Bellevue-Yorkville Health Demonstration in 1932 Reviewed*

INTENSIVE educational campaigns for the control of diphtheria and for the prevention of street accidents were features of health educational activities of the Bellevue-York-

village Health Demonstration during the past year, Savel Zimand, administrative director of the demonstration, states in his report for 1932.

"Diphtheria cases showed a decrease of 58 per cent and deaths a decrease of 67 per cent," writes Mr. Zimand. "Injuries due to street accidents were reduced 13 per cent and fatal street accidents 28 per cent. New York City as a whole registered a much smaller reduction, 7 per cent in the number of those injured and 14 per cent in the number of fatalities. In considering the reduction in Bellevue-Yorkville, it is especially well to recall that the district contains some of the most traveled thoroughfares in the City. Approximately 30,000 pieces of literature, including 3,000 posters, were used throughout the district, every schoolroom and almost every store and shop being placarded. Decreases in cases and fatalities resulted. Under the leadership of the Police Department and the school authorities, and in cooperation with the Boy and Girl Scouts and other welfare and health organizations of the district, the safety campaign was carried into every corner of the area.

"Patients attending the various Department of Health clinics, including those newly enrolled in 1932 as well as those carried over from the previous year, numbered 8,410 in 1932, as against 7,598 in 1931," Mr. Zimand continued. "Of the 8,410 patients registered, 3,803 were in the tuberculosis service and 4,607 in the cardiac clinic and various child hygiene services. Clinic visits during the twelve-month period of 1932 totaled 34,067.

"The important divisions of the tuberculosis service were, as in the past, the consultation chest service for private physicians and the Yorkville district chest clinic for children and adults. The X-ray department and fluoroscopic equipment supplement these, and since 1931 a pneumothorax refill service and lipiodol tests have been available. During the year, as a result of the experiment carried on in Bellevue-Yorkville, the Department of Health extended its pneumothorax service to other parts of the City.

"In the Yorkville district chest clinic, for patients who cannot afford the services of private physicians, 756 new adult patients and 393 children were examined last year. These,

together with those carried over from 1931, made a total of 6,088 visits. The consultation service for private physicians had 2,014 new tuberculosis suspects, who, together with those carried over from 1931, made a total of 3,106 visits last year. Established in 1929 as a demonstration clinic, this service is designed solely for patients of private physicians who cannot afford to pay the fee of a tuberculosis specialist. Five similar clinics have since been opened in other parts of the City by the Department of Health.

"At the three baby health stations in the district, there were 939 new admissions during 1932; in the three preschool clinics of the area, 711 new enrollments; and in the children's clinic, at the Health Center, 188 new admissions.

"The city-wide diagnostic cardiac clinic for children who apply for working papers and are found to have suspicious cardiac conditions has proved of real value. Many children have been kept from entering occupations which would have been detrimental to their health, and others have been relieved of the fear of cardiac disease and sent back to normal life. This service is conducted by the Depart-

ment of Health in cooperation with the Board of Education, the Heart Committee of the New York Tuberculosis and Health Association, the Employment Center for the Handicapped, and the demonstration staff. A total of 401 new cases was admitted in 1932.

"The dental service at the Center, maintained jointly by the Tuberculosis Committee of the Association for Improving the Condition of the Poor and the demonstration staff, continued during 1932 to combine a clinic service in the building with a broad educational program in the schools and in the community at large. During the year 3,092 individuals were treated and 19,084 treatments were given.

"The psychiatric service of the demonstration has now been in existence for over two years. Its objectives are to carry out an educational program among nurses from the Department of Health who are working in the district, and to be of service to patients referred by the nurses or by doctors in the Health Center clinics. An important part of the educational program for the nurses has been the group meetings held every two weeks by the psychiatrist.

"The development of the generalized nursing service in both the Yorkville and Bellevue districts continued in 1932, completing nearly four years of this type of service in the Yorkville district, and one and one-half in the Bellevue district. Each nurse is responsible for one or two schools, the communicable disease and tuberculosis work in her area, the follow-up work from the Department of Health clinics, and for assisting in rotation at the Department of Health clinics. The number of nurses in each area—Yorkville and Bellevue—for the last half of 1932 averaged 14 or 15 respectively. The case load of the Yorkville nurses averaged 486 patients in 284 families, and that of the Bellevue nurses, 396 patients in 322 families.

"Because of the shortage of nurses, the Commissioner of Health decided to discontinue in the district, on a trial basis, the nurses' visits to the homes of school children to encourage the correction of defects. An intensive school consultation service, to replace the former home visiting, was planned for the Belle-

vue-Yorkville area and begun on trial in December.

"As in the past, the health educational work has been directed toward securing desirable changes in public opinion, attitudes, and habits on questions of public health and preventive medicine. In addition to the all-year-round health instruction program, the attention of the population of the district was especially focused during special months on tuberculosis, diphtheria, syphilis and gonorrhea, and safety. Upwards of 250,000 pieces of printed matter on diphtheria, tuberculosis, safety, syphilis and gonorrhea, et cetera, were distributed during the year to the families and stores by the house-to-house canvass method or from the lobby at the Health Center. A total of sixty-five meetings was held on tuberculosis, syphilis and gonorrhea, diphtheria, and other subjects at the headquarters of the health and welfare agencies in the district. Special exhibits were held in connection with all the campaigns and as a regular feature of the continuous health educational work."